

MAR 13 1930

# THE ARCHITECTURAL FORUM



IN TWO PARTS PART ONE

## ARCHITECTURAL DESIGN

GOLF AND COUNTRY CLUB REFERENCE NUMBER

### MARCH 1930

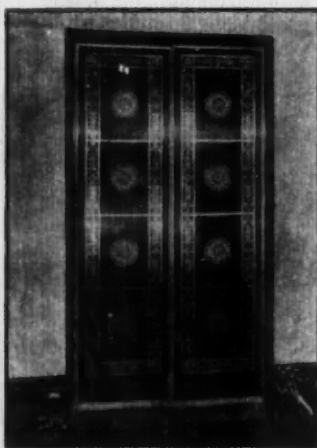
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## BOOK DEPARTMENT

### PLANNING AND DESIGNING GOLF AND COUNTRY CLUBS

A WORK BY  
CLIFFORD C. WENDEHACK

MANY who have traveled extensively in America and Europe are likely to observe that Americans do not know how to play. This may or may not be true in a general way at the present time, but if the increasing number of golf and country clubs affords any indication, it would seem that the shortcoming is rapidly being remedied. A map showing the locations of such clubs within motoring distances of New York would be so heavily studded with dots as to leave little space for anything else, and the same condition exists to a greater or less extent in the suburbs surrounding almost all of the metropolitan centers throughout the country.

In a civilization in which the city areas are rapidly expanding and making it more and more difficult for their inhabitants to reach the open country, golf and country clubs furnish an easy and convenient contact with nature for busy city workers. Formerly golf and the privileges of belonging to a country club were thought to be exclusively for the very wealthy, but more recently it has become possible for a greater number of the well-to-do middle classes to become members of less pretentious clubs, and for those who cannot afford this, there are public and semi-public courses and clubs where all may enjoy the advantages of outdoor play without the expenditure of a great deal of money,—although sometimes at the cost of a large amount of time and patience.

Added to these there are the clubs in connection with seaside, mountain and other resorts. Since all golf courses need some facilities for storage of equipment, and conveniences for the players, the buildings of all sorts in which the golfer may bathe, dress and lounge

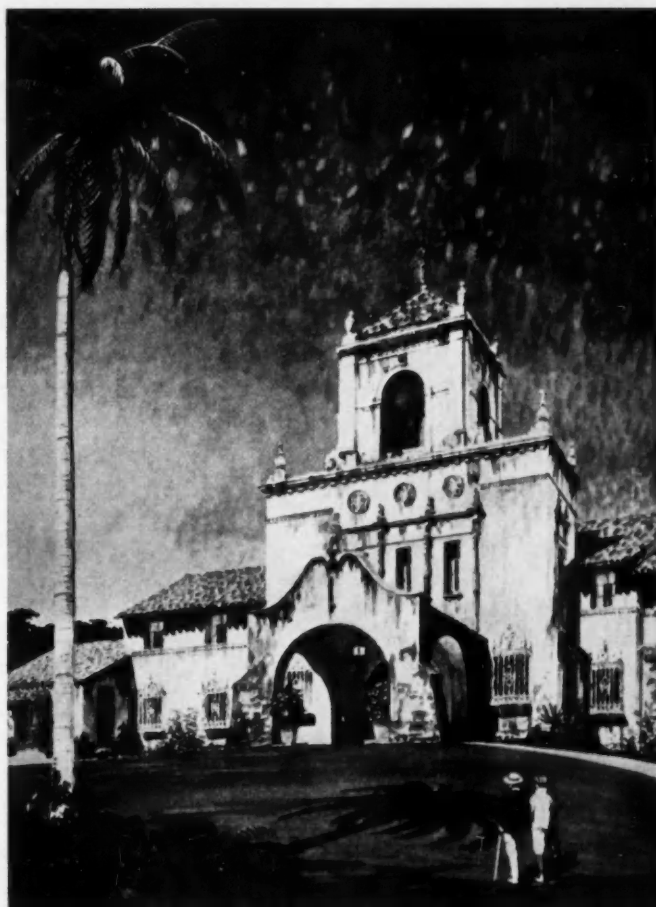
or enjoy social functions have come to constitute an important and highly specialized type of architecture. In this field, as well as in that of the skyscraper, America has become the leader, and few if any European precedents are being made use of in the planning and construction of clubs. Americans, being accustomed to all

sorts of conveniences and luxuries in their homes and shops, are likely to expect the places to which they go to play to be equipped in the same efficient and elaborate manner,—usually to an even greater extent. So varied are the requirements arising from the assemblage of a large group of people for play and recreation that only a specialist is in a position to be familiar with all of them.

The members of a club's committees or its managers may know what facilities are likely to be required, but, being unfamiliar with the technique of planning and building, they will probably be unable to provide for them in a proper manner. On the other hand, most architects are eminently capable of making suitable designs for club buildings as judged from the standpoint of design, but unless they have made or are willing to devote a great deal of time to the making of a thorough

study of the particular club concerned, there is danger that some of the features essential to the workings of an efficient club building will be overlooked.

As in almost all specialized branches of architecture, several men have become recognized as being among the leaders in the best and most up-to-date practice in the equipment of country and golf clubs. In the realm of the building of golf and country clubs one such man is Clifford Charles Wendehack, and the architectural



Country Club at Caracas, Venezuela  
Clifford C. Wendehack, Architect

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profession as well as the officials of clubs may consider themselves fortunate in that they have available a volume summing up the experience acquired during his long career as a country club specialist. If one wishes to be convinced as to the amount of this experience, one has but to glance through the plate section of this volume and note the surprisingly large number of clubs designed by Mr. Wendehack himself. However, it is likely that the architect will be more interested in the text portion of the work, for it is here that Mr. Wendehack has described in full detail the unseen but highly important features of practical layout and equipment. It is here, in the opening chapter, that he discusses the advisability of housing a club in a remodeled or altered building, and he expresses the opinion, based on long experience, that except as a temporary expedient it is usually undesirable to attempt necessary alterations.

The highly important subject of the materials to be used cannot be too strongly stressed, for it is this consideration together with that of the type and quality of construction that insures the lasting beauty and convenience of any building. Mr. Wendehack is duly appreciative of this fact and devotes considerable discussion to the various types of materials used from foundation to roof, the information being particularly valuable because of the fact that it is backed by data on their cost, permanency, safety and effectiveness. Materials used in the interior finish are given special consideration, the relative merits of flooring materials for use in the various portions of the club being treated as to wearing qualities as well as to their appearance.

It has sometimes been found necessary by clubs to

construct buildings on what might be called the "unit" system,—that is, one part at a time as funds become available or as the need for more space is made evident. The author makes specific recommendations as to which portions of the buildings should be built first and the sequence in which other portions may be added to the best advantage of all concerned. Locker and bathing rooms being most essential, they should come first and may be followed by shops for the club professionals, kitchen and grill, administration offices, dining rooms, lounges, women's quarters, card rooms, reception rooms, porches and terraces. Although it is permissible in cases of necessity to construct the buildings in this piecemeal fashion, it should be remembered that the whole must be planned as a complete unit at the beginning. The advisability of using only the best grades of materials in order to insure the permanency of the building is emphasized by the strong argument that it is much more economical, and a great deal less troublesome, to expend a larger amount at the start than it is to be constantly appropriating the necessary sums to keep an inferior building in repair, to say nothing of the inconvenience entailed by the making of such repairs. The cost of club buildings is discussed from every angle in order that those planning new structures may reap the greatest and most lasting benefits from the sums expended in building and maintenance.

Mr. Wendehack also has a word to say as to the inspiring influence of color, about which we have been hearing so much of late, and he advances some interesting theories as to why human beings are so strongly influenced by the color effects with which their eyes are

## "CHURCH BUILDING"—By *Ralph Adams Cram* (A NEW AND REVISED EDITION)

THE improvement which has accompanied the progress of American architecture during recent years has been no more marked in any department than in that of an ecclesiastical nature. This has been due primarily to the rise of a few architects who by travel and study have acquired much of the point of view from which worked the builders of the beautiful structures which during the fourteenth century and the fifteenth were being built over all of Europe.

These architects have closely studied the churches, chapels, convents and other similar buildings in England, France, Spain and elsewhere, and the result has been a number of American churches of an excellence so marked that they have influenced ecclesiastical architecture in general and have led a distinct advance toward a vastly better standard. This improvement has not been exclusively in the matter of design, for plans of older buildings have been adapted to present-day needs, and old forms have been applied to purposes which are wholly new.



THE appearance of a new and revised edition of a work which is by far the best in its field records this progress. Mr. Cram, being perhaps the leader among the architects who have led this advance, is himself the one individual best qualified to write regarding the betterment of ecclesiastical architecture. The editions of this work of 1900 and 1914, which have for some time been out of print, have now been considerably revised and much entirely new matter has been added,

which in view of the change which has come over ecclesiastical building of every nature is both significant and helpful.

Illustrations used in this new edition of "Church Building" show the best of recent work—views of churches and chapels large and small, in town and country, buildings rich in material and design and others plain to the point of severity, with the sole ornament in the use of fine proportions and correct lines. Part of the work deals with the accessories of the churches and their worship.

345 pages, 6 x 9 inches, Price \$7.50

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greeted. It is quite evident that if color can produce the effect of putting people in a cheerful and happy frame of mind, there is no place in which it can be used to better advantage than in their clubs, where an atmosphere of cheer and brightness is always to be desired. In the use of color and pleasing forms much can also be accomplished toward giving clubrooms that homelike and friendly atmosphere conducive to the relaxation that is so important to beneficial play. Although the author does not enter deeply into the subject of color, he does point out some interesting facts encouraging its use in clubs.

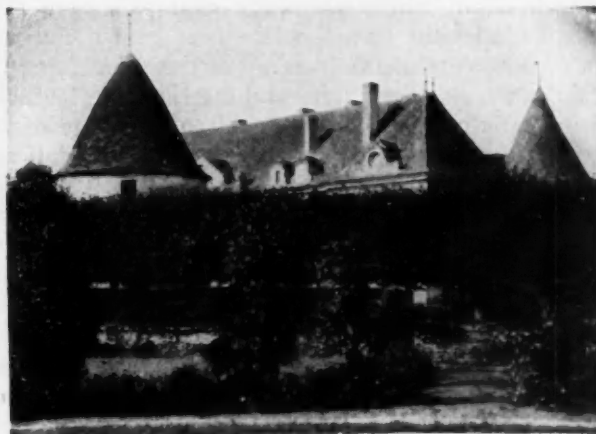
An important problem which many clubs are called upon to decide is whether or not the club group shall include sleeping quarters for guests and members, and if so to what extent they should be included. In a section devoted to this question the author puts forth arguments both in favor of and against the inclusion of such rooms and suggests what type of room will prove most popular and most advantageous from the standpoint of economy. He also discusses the details of equipping and furnishing these rooms to render them attractive.

Another outstanding feature of club convenience is that of the dining room, where members may enjoy a good meal before or after play. It is surprising to what a marked extent the cuisine affects the popularity of a club. As in all places where food is served, the paramount object to be sought in layout and equipment of a club dining room or grill is what is convenient for the guests and facilitates or expedites the smooth and rapid preparation and service of food. Even the best of stewards cannot give satisfactory service if he is impeded by a poorly laid out and equipped establishment. Practical ways of arranging the dining room in relation to other rooms must be sought and the proper amount of space to serve the maximum number of guests provided both in the dining room, serving rooms and kitchen. Figures based on experience are given to show the relation between the number of lockers to be provided and the number of seats which will be required in the dining rooms. Small points, seemingly unimportant, but actually quite essential to the full enjoyment of dining room service, are pointed out by the author. It is to be expected that the architect will take an unusual interest in the treatment of the grill room, for it is here that he is permitted more freedom in making use of some of the more picturesque forms of architectural treatment. The author enumerates some of the up-to-date tendencies in the handling of these rooms and adds some discussion of that important feature, the fireplace.

The departments of a club in which the greatest confusion may result from poor planning and a bad choice of equipment are, of course, the locker room and its adjoining shower rooms. Here everything should be sturdy, sanitary, and convenient to the highest degree. There is a great variety of such equipment on the market, and club committees and architects must make the decision as to what will best serve their needs. There are, however, some basic considerations which will be of value in helping them to make the proper decisions, and those set forth in this volume will be of the greatest practical value in equipping these rooms. Water supply is often a serious problem in the equipment of clubs, and it should be carefully provided for in advance, especially since swimming pools have attained

## Small Manor Houses —AND— Farmsteads in France

By Harold D. Eberlein  
and Roger W. Ramsdell



Chateau de Missery, Cote d'Or

**I**N all the wide search for architectural types in which to design and plan the American home, there has been found nothing more beautiful and appropriate than what is called "French Provincial," the term applying to the better order of farm houses, *manoirs*, and even to minor chateaux. It is a type full of graceful informality along with the touch of dignity or sophistication which renders it just a trifle formal; it is expressive of eighteenth century charm, and it suits admirably the needs of the present-day builders of suburban or country homes. In the refined and slightly reticent exteriors of the old French country houses, much emphasis is placed upon excellent architectural lines, while their interiors show carefully arranged and spacious rooms with well placed chimneypieces, doors and windows.

This excellent and authoritative work should be in the library of every architect whose practice includes work of any kind of residence character. It brings to the attention of American architects a type which is fresh and new without being freakish. It includes 254 illustrations from original photographs showing subjects complete as well as in great detail, together with many measured drawings and perspective plot plans. Flat Quarto (7½ x 11 ins.), bound in handsome library blue buckram, stamped in gold, uncut edges with gilt tops.

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such an important status in club life. These pools require a great deal of special equipment, and their careful planning is the subject of several pages of valuable and practical information and important data.

The plate section, which occupies about two-thirds of the volume, and numbers 157 full pages, contains illustrations from photographs of completed clubs in all parts of the United States. The examples shown include not only the more pretentious clubs but the simpler types as well. In fact, the selection has been made to furnish precedent for almost any prospective building, whatever its requirements may be. The list of architects from whose work the examples have been chosen includes the names of the best known club and country house architects from all sections, including the Pacific coast. Both exteriors and interiors are featured, and in many cases floor plans add to the value of the material. In addition to illustrating the strictly golf and country clubs, variety and interest are lent to the collection by the inclusion of one or two yacht clubs, a well known beach club, and the Golfers' Club, New York, which is a remarkable example of the adaptation of an old stable building to the purposes of an up-to-date city club. The need for a work dealing with this important branch of architecture has long been evident, and those who have been looking forward to its publication will not be disappointed with Mr. Wendehack's treatment.

**GOLF & COUNTRY CLUBS.** A Survey of the Requirements of Planning, Construction and Equipment of the Modern Club House. By Clifford C. Wendehack, A.I.A. Text and 157 Plates, 9½ x 13 ins. Price \$15. William Helburn, Inc., New York.

## ***"A History of Architecture on the Comparative Method"***

By SIR BANISTER FLETCHER,  
F.S.A., F.R.I.B.A.

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## THE EDITORS' FORUM

CHARLES MORRIS, 1869-1930

THE death of Charles Morris, in Cleveland on January 27, removed from the profession an architect of great ability and a man of high ethical standards. It ends for me a friendship which began in 1891, when I strolled into the Atelier Laloux in Paris with a letter of introduction to Morris from the late Thomas Hastings. Morris hurried me out in time to avoid the usual practical jokes played on visitors, and we became at once intimate friends. We prepared the admission examinations together, and together we bicycled through Touraine and Normandy.

Morris had the unique distinction of having been the first employe of the firm of Carrere & Hastings, and to that office he returned for a time after completing his work at the Beaux Arts. Later he formed a partnership with Richard Walker, doing excellent work, including a number of the Carnegie Library branches in Brooklyn. In 1902 he and I were asked to go to Cleveland to help on the design of the new court house. After a few weeks of study on the plans, the architects asked one or the other of us to stay on in Cleveland and carry the work through. This Morris did, with the result that Cleveland has one of the finest court houses in the country. Upon his return to New York, Walker & Morris won the commission for the 22nd Regiment Armory in competition, served as architects for the Municipal Ferry houses at South Ferry and the bridge and pavilions on Riverside Drive at 95th Street. Unfortunately, the partnership broke up just when success seemed to be knocking at the door. Charles Morris was then appointed chief designer in the Office of the Supervising Architect of the Treasury, where he greatly raised the standard of design. Hundreds of well designed post offices throughout the country are today a credit to his ability. With our entry into the World War the appropriations for government work were discontinued, and the Supervising Architect's office practically ceased work. After winding up his work in Washington, Morris returned to Cleveland and in 1923 formed the firm of Morris & Weinberg, to which success was coming in a widening field when his fatal illness began. Some three years ago he was forced to suffer the amputation of one leg, but, far from discouraging him, this handicap seemed to render him more optimistic and even more courageous in overcoming difficulties.

He was elected to fellowship in the Institute in 1925 and also served as president of the Cleveland Chapter the following year. During all his practice he showed special interest in architectural education, being one of the early members of the Society of Beaux Arts Architects and serving on its juries from time to time. He was one of the founders of the Cleveland School of Architecture in 1922 and served as secretary and treasurer of the board of trustees until the School became officially affiliated with Western Reserve University in 1928. He remained as a member of the board of trustees until his death. Charles Morris was a fine man and a true and loyal friend. Through many years he persevered without receiving the credit which was his due. In the last years of his life, though working under a severe handicap, he achieved his greatest success.

CHARLES BUTLER.

### ✓ MODERN AMERICAN PROBLEMS

UNDER the auspices of the Department of Architecture of New York University, College of Fine Arts, a special course of ten lectures will be given on "Modern American Problems." The course is intended primarily for practicing architects, and the lectures will be given in the main lecture room of the Department of Architecture, 9 East 37th Street, New York, on Thursday afternoons from 5:15 to 6:15 P. M.

The schedule is:

Raymond M. Hood	THE ATTACK OF THE PROBLEM	Feb. 20
Ralph Walker	SKYSCRAPERS	Feb. 27
Charles Butler	HOSPITALS	March 6
Henry Wright	CITY PLANNING	March 13
Robert D. Kohn	INDUSTRIAL BUILDINGS	March 20
Ralph Adams Cram	CHURCHES	March 27
H. Van Buren Magonigle	MEMORIALS	April 3
Philip Sawyer	BANKS	April 10
Kenneth M. Murchison	APARTMENT HOUSES	April 17
Joseph Urban	MODERN THEATERS	April 24

Arrangements are being made for the publication of full reports of these lectures in THE ARCHITECTURAL FORUM.

### D. EVERETT WAID RECEIVES GOLD MEDAL

AT the annual dinner of the New York Chapter of the A. I. A., held on Thursday evening, February 6, on board the French liner, "Ile de France," the Medal of Honor for 1929 was awarded to D. Everett Waid. In the citation delivered at the presentation, C. Grant La Farge thus fittingly eulogized Mr. Waid: "The New York Chapter of the American Institute of Architects awards its Medal of Honor for 1929 to Dan Everett Waid. Past President of this Chapter, and Past President of the Institute, Mr. Waid is among the foremost of those men who by long years of unselfish devotion, sound judgment and high integrity have notably contributed to the advancement of their profession. To these services he has added great personal generosity. In the practice of his profession he has occupied positions of heavy responsibility, discharging the trust reposed in him with marked ability. This medal is awarded as the fitting recognition of his architectural accomplishments and as testimony to the esteem in which he is held by a profession which is in so many ways his debtor."

### ✓ A CONGRESS OF ARCHITECTS.

THE 12th International Congress of Architects will be held in Budapest, the capital of Hungary, from September 7 to 14, 1930. It is expected that, from all parts of the world, architects will meet in large numbers at Budapest, and already many enrollments have been received at the offices of the Congress. Among others, one of the most celebrated architects of the world, Prof. Ragnar Ostber of Stockholm, has announced his intention of attending the Congress; and he has also declared his readiness to take part in the International Exhibition of the Architecture, which will be held in conjunction with the Congress, by exhibiting the plans of one of his most important creations,—the town hall of Stockholm.

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VOL LII, No. III

MARCH, 1930

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# THE ARCHITECTURAL FORUM

VOLUME LII

NUMBER THREE

MARCH 1930

## THE ARCHITECT AND THE BUILDING COMMITTEE

BY

CLIFFORD C. WENDEHACK

ARCHITECT

THERE are many phases to be considered in producing a good club plan, for, regardless of the amount of experience an architect may have had in designing club buildings, they are more often developed by the building committees than by the architect's good judgment. It is not an easy matter to stand before a board of 12 serious men and tell them that their ideas, if put into practice, would produce a conglomerate mass which would fall far short of answering their needs and would be regretted by their successors. In many instances, the building committees are responsible for the architectural abominations which are found throughout the country. An architect is a strange combination of ego and a desire to please, and this latter characteristic makes it difficult indeed for the professional man inexperienced in club planning to stand before a hard-headed group of golfers and tell them that their ideas are wrong, extravagant, and leading them to acquiring a hodgepodge building.

Perhaps if every architect designing a club were a "Bobby Jones," he would have more courage to tell his committee just what he would not permit them to do; but unfortunately this is seldom the case. From personal experience, I know that it is only after many successive operations, after many instances of witnessing the absurdities of a committee's ideas, that an architect gains courage to be bluntly frank and give his clients the benefit of his knowledge gained from the mistakes and faulty logic of other and successive committees. It is interesting to note the different characteristics of a committee of women for a women's club, and those of a similar committee of men. The women are possessed of all

the common sense and decisiveness of the race, and while there are always exceptions to every rule, and while the personnel of building committees certainly cannot be judged by rules in any instance, it is interesting to note that committees of women are inclined to leave more to their architects' judgment than the men. Perhaps this is a part of their inherent training,—or perhaps perception on their part, which teaches them that their architects know more about the subject than they do. But the fact remains that although the committee composed of club women usually requires more time for discussion and weighs subjects in a different manner than a committee of husbands would do, when it does reach a conclusion it usually stands by it consistently. Of course, there are always on a women's committee individuals with masculine minds, and vice versa, but for an out-and-out scrap and a successful upsetting of all plans, some committees of men are supreme.

However, common sense judgment, clear visioned business and artistic sense are not the exclusive prerogative of either sex. All architects know from experience that the close relation between client and architect for the period required to design and construct a building brings out a man's or woman's foibles, crotchets and true nature as no other human experience can do, and that when a number of these separate identities composing a committee are to be dealt with, it is often amusing and tragic to see by what means right triumphs over personal hobbies. In no other form of building, possibly, does the flaunting of personal hobbies come to the fore as strongly as in the designing of a country club. And it is



Views of the North and  
South Elevations and the  
East Terrace Entrance

*Photos. R. S. Grant*

Short Hills Country Club  
Near Old Short Hills, N. J.  
C. C. Wendehack, Architect



indeed a welcome relief when some clear-visioned member of the committee asserts himself. A man who can stand on his two feet and help the architect accomplish what his experience tells him is right, sooner or later comes to the fore in every club house building committee.

The psychology of committees is an interesting study, provided the architect does not allow his personal feelings to become too much involved,—which of course always produces a hopeless situation. Assuming that he can bide his time for securing the results he desires, it is possible at the psychological moment to swing an entire committee on to the right track to acceptance of the ultimate layout. It is often necessary, however, before this can be accomplished, to detect within the ranks of the committee the cranks who are solely destructive. They are usually the most parsimonious members of the club, and if the





South and West Elevations  
and the Entrance Door Show  
Dutch Colonial Influence



The Hackensack Golf Club  
Situated at Oradell, N. J.  
C. C. Wendehack, Architect



membership were composed entirely of them, the organization would fail for lack of support. The perpetual crank, however, can often work havoc in regard to the building program in the financing as well as in the actual layout of the plan itself; and in looking back over a period of years it is interesting to note what harm committee cranks have been able to effect in the finished product. If the architect could only find some means of letting his committee see, as he does, the errors that their predecessors have made, much would be accomplished for the benefit of future club buildings as well as the club they are sponsoring.

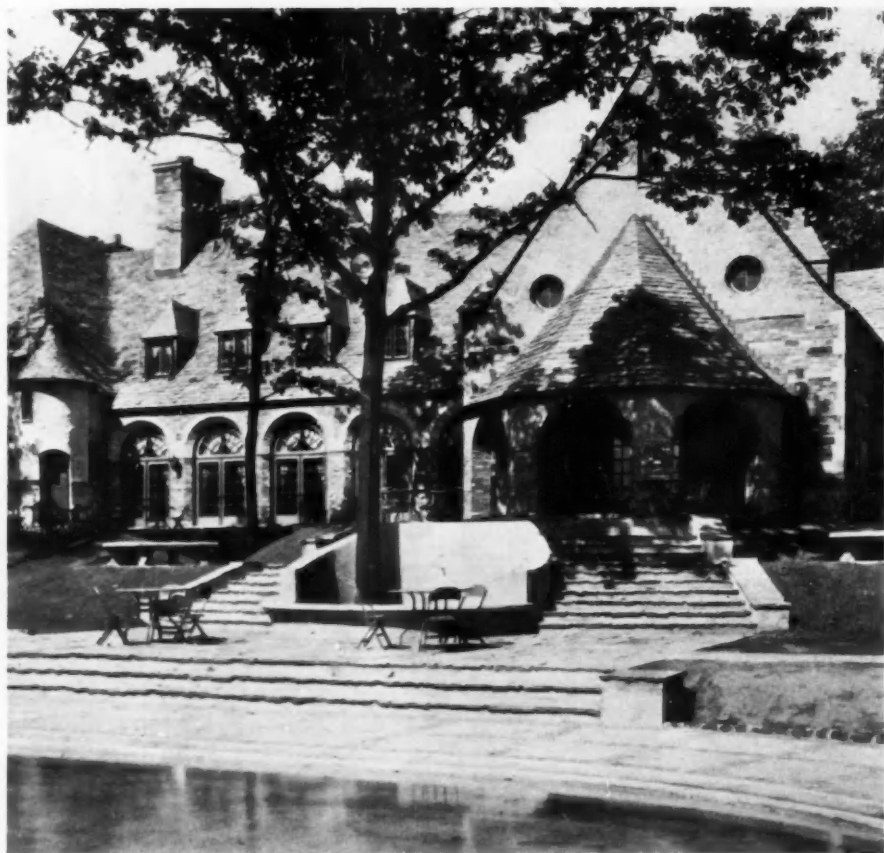
It is only natural that the architect classifies and analyzes the committees with which he finds himself from time to time in contact. It might be logical to classify them as "destructive" and "constructive" types. The latter are inspiring; they spur one on to create, whereas the former are in-



terested only in expressing their own ideas. The final results are obvious, and I am of the firm belief that every club house reflects not only its architect's ability, but the characters of the men who have served on its building committee.

Regardless of how good a talker an architect may be in painting a word picture of a building, laymen are likely to place their own interpretation on his words; or else, as is more often the case, they are unable to visualize his conception at all. Therefore, after a plan is reasonably determined upon, a water color sketch of the building is of great value in "selling" the architect's and committee's ideas to the entire membership. Such sketches should not be used to distract the committee's consideration of the details of the plan, but merely to give an impression to the club at large of what the finished building will be. It is often interesting and helpful to have both plans and perspective produced in color on lantern slides and projected on a screen where they may be explained and discussed by the architect before members. This permits each member to feel that he is being taken into the architect's confidence; and if members are permitted to ask questions, it will be found to be of great assistance in increasing membership or promoting a bond issue. This, of course, is a dangerous procedure, unless the architect with his committee has previously tried

Two Views of the South  
Elevation, Ridgewood Coun-  
try Club, Paramus, N. J.  
Clifford C. Wendehack,  
Architect





out every possible layout which would solve the problem. If the deductions gained from these successive tryouts have been incorporated in the plan being shown, he will know his subject thoroughly and will feel that he has his committee solidly back of him.

The proper relation of the various rooms comprising a club plan is of fundamental importance. Each and every possible separate and combined use of the various areas should be carefully considered. Often, ideas expressed at an open meeting in relation to these uses are most helpful; for after all every man has a different way of enjoying himself, and when we consider that some men's idea of a good time is to obtain as much seclusion as possible from their families, whereas others wish to be with their families and friends, it becomes a problem to entirely satisfy these opposites within the confines of one building. Therefore, we must always keep in mind the good of the majority, and so relate the main rooms of the club as to produce the largest possible area when desired. This can and has been done in many instances, at the same time retaining livable and architectural rooms. The barn-like appearance of large rooms is obsolete for club purposes just as surely as the club of former days is impractical when it is divided into many small units which are useless for a party of 300 or 400 people. The



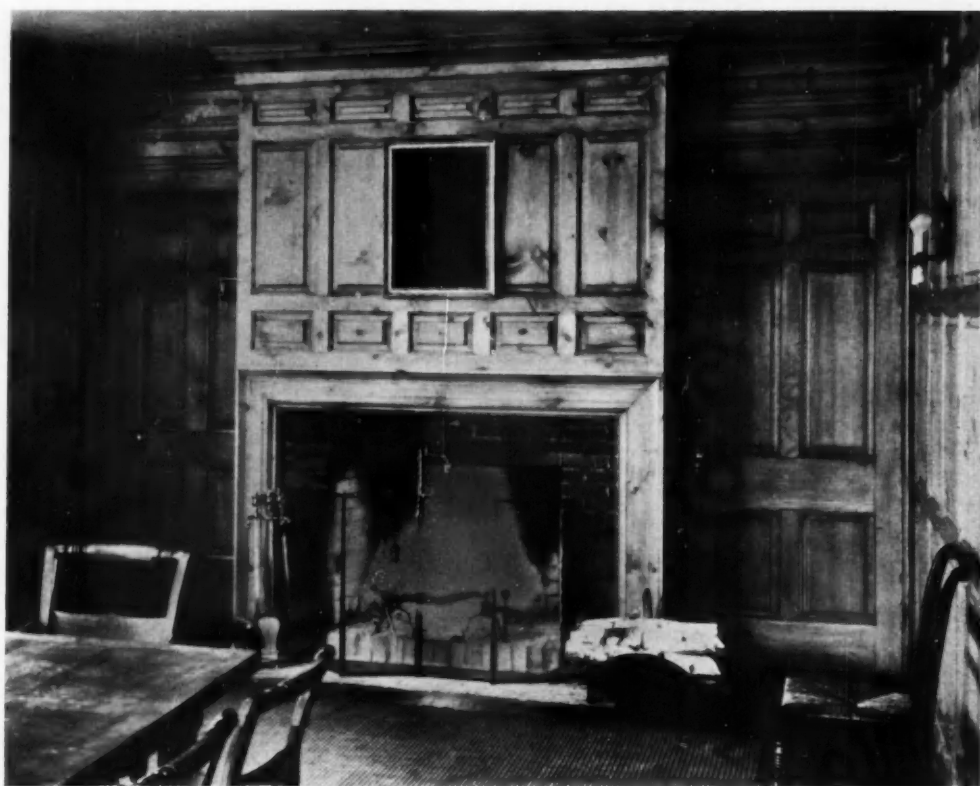
Forecourt Entrance and  
Covered Porch, Ridge-  
wood Country Club,  
Paramus, N. J. Clifford  
C. Wendehack, Architect



rambling and informal layout such as is found in the English house does not adapt itself to modern club uses; and neither the architect nor the committee should permit indulging in this type of interior planning.

Probably of the first importance in a club-plan is its proper orientation to the points of the compass, to the golf course, and to the means of ingress and egress. In most cases these three considerations are conflicting, and this is one of the first problems that the architect's ingenuity is called upon to solve. To do this, one must have an intimate knowledge of the site, of the home greens and holes of the golf course, and the habits and lines of travel of the membership. After these fundamental problems are satisfactorily solved, there is the practical inter-relation of the rooms which must not be lost sight of. Unnecessary steps, loss of time, and confusion are as costly in a club house, even though it be recreational, as

Living Room and Private Dining Room With Pine Paneling on Walls, in the Ridgewood Country Club at Paramus, N. J. Clifford C. Wendehack, Architect





they are in a business institution. It means wear and tear on furniture and carpets, a larger staff of attendants, and less patronage by the members if the relation of the major rooms is not practical. It is true, nevertheless, aside from certain fundamental principles, that what might be a practical inter-relation of rooms for one organization would not serve well at all for another organization, and only after observing for a while the traditions and life of the individual club can an architect determine upon the practical relation of the rooms.

It is these facts which make architectural competitions for clubs so useless and valueless to the clubs' best interests. Many club committees, in their desire to obtain the best architectural ideas available for their organizations, decide that a competition should be held, usually among several architects who are members of the club and outside friends or relatives of the officers. I have had

Above. Mantel in Lounge,  
Park Club, Buffalo, N. Y.  
Below, Living Room, the  
Hackensack Golf Club,  
Oradell, N. J. Clifford  
C. Wendehack, Architect



the pleasure of viewing countless such competitive drawings, and regardless of the ability of the architects competing, I have seldom seen any intelligent solution of that particular club's problem. The reason for this is that the architects do not know their subject,—they cannot be expected to know such a subject in a fortnight's period, with the result that much ink and water color are wasted, and a theoretical architectural expression rather than a club solution is obtained.

The other side of this question is the fact that when the committee members receive these drawings they do not understand them. They are not what the individuals on the committee expected, and even if they should pick the winner and award him the contract, it would be hard to find an instance where the winning plan was actually built. The reason for this is obvious. The ideas incorporated in a club's competitive drawings are usually based on a theory of the way in which the club should function; and although these theories may be ideal, they are usually torn apart when put into practice. If we were to look around the country and were able to find a club that was built from competition drawings, it is safe to say that such a building would be a handicap to its manager, its officers and members. If club committees charged with the selection of an architect could know the inside workings of an architect's office, they would, I am sure, discard this useless practice of asking architects to compete for their buildings, cast personal considerations aside, and select an architect who has had previous experi-

ence in this class of building and go to work with him in an honest way to obtain the results which would best meet the needs of the majority in the most practical way possible.

The importance of spending money where it will count most is a matter which should be carried into every conference. Expensive architectural hobbies should not be indulged in for club buildings. Marble mantels and gold leaf do not make a successful club any more than would catering to expensive tastes often possessed by some members of the committee, based on life in their own homes. An architect should be obliged to submerge his own inclinations and force the committee to do likewise until such time as the heart and the main arteries of the plant have been properly taken care of. There are many more effects which can be obtained cheaply, with a little more study perhaps, than with the extravagant use of expensive material. Economics enter largely into the conception of a club building. All organizations have a limit to their earning capacities, and buildings should not be designed for clubs which cannot afford to properly maintain them. Dues, initiations and stock in many instances should be raised and put on a par with those of similar organizations, but there is a limit to which this can be done in all communities, and if this fact is not taken into consideration, the most beautiful and properly planned building will be but a load and a drag on the members for the rest of their lives, instead of a pleasure and a source of recreation for them and their families.



The Phelps Manor Country Club, Englewood, N. J.  
Clifford C. Wendehack, Architect

# THE ARCHITECTURE OF THE COUNTRY CLUB

BY  
ROGER H. BULLARD  
ARCHITECT

WITH the apartment becoming more popular as a place of rural as well as urban residence, the country club is taking its place as a vital and important factor in the life of a community. For although some would have us believe that the apartment house has been devised to conform with our modern ideas of living, it is much more to the point to reverse that statement and say that our ideas of living have been necessarily transformed, due to the fact that the majority of us are living in small apartments. However, we still cherish certain of the old traditions on which the home life of past generations was founded. We still like to play a little each day; we still enjoy mingling with our friends, and we still would like to be able to stage certain home affairs such as those in which our fathers and mothers and our grandfathers and grandmothers found such pleasure. In other words, our ideas of living have not changed very much, but we cannot live the same life in a small apartment as we would in a private house. To entertain in a small apartment is almost out of the question. What is the result? Must we give up entertaining? Give up seeing our friends? It is here that we see the opportunities of the country club. When we entertain at dinner, we do so at the club; when we are invited to a dance, the party is sure to be given at the club, and when we go out to play cards, it is almost sure to be a club affair.

Thus we must not think of the modern country

club as exclusively a sport club,—a place to play golf and tennis,—but rather must we look at it as a sort of community house. Probably many of the members of an average country club never even held a golf club or a tennis racket in their hands, but they all dance, play cards and enjoy sitting around a big open fire with their friends. In this light we see the lounge as the most important feature of the plan of the country club of today. It must be a good sized room, comfortable in every detail, while its architectural and decorative treatment must not lean too decidedly toward any one style or period, for the membership of any club is made up of people of varied tastes. It is often desirable to arrange the lounge so that it may be combined with the dining room to provide an assembly room for large gatherings. In clubs where golf is played by the majority of the members, the location, size and equipment of the locker room are of major importance in the planning of the club.

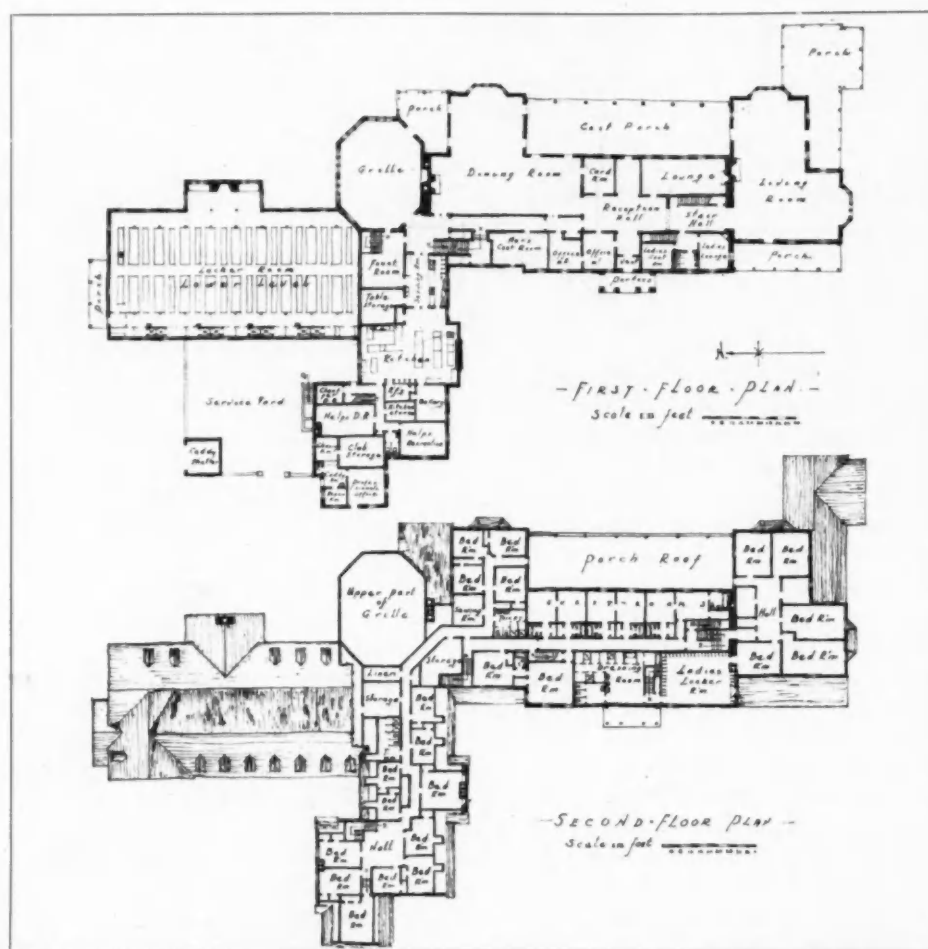
It is highly important that the architect be consulted before the actual site of the building is decided upon, for his special problem is to create a composition blending harmoniously with the landscape and expressing in terms of architecture the social and sport life of the community. The style of the architecture selected is a matter of both locality and of taste. In certain sections of the country,—those for example in which Colonial traditions are held sacred, it is desirable that the design reflect certain Colonial tendencies.



Photo. Hewitt

Milwaukee Country Club.  
Fitzhugh Scott and Roger H.  
Bullard, Associate Architects





Milwaukee Country Club. Fitzhugh Scott and Roger H. Bullard, Associate Architects

Similarly, in California, where old Spanish traditions are still cherished, the architecture naturally may bear evidence of Spanish influence. Nor must we overlook the effect of structural materials on architectural design. In many cases, while excavating for the club house, a great amount of stone is unearthed which may be used to advantage in the construction of the building. Also, the club property very often abounds with loose stone which allows of a further saving in the cost of the structure. In such cases the design must be such as to conform with stone details, for it is much more important that the building express the peculiar character of the material of which it is constructed than that it shall conform accurately to some period of architecture of the past. It may be that there is an insufficient quantity of stone on the property to complete the building, and in such a case, wood, stucco or brick may be substituted or combined with it. Care should be taken, however, not to disturb the character of a stone building by overdoing the combination of materials.

In the planning of the structure, the architect should consider orientation, contours of the land, and the relation of club house to the golf course,

with the principal outlook embracing a view of the course. It is desirable that both the exterior and interior design of a country club should be informal, simple and homelike. The plan, developing usually into the rambling type of building, must be largely a matter of assembling masses of various sizes into one complete composition. The main portion of the structure, or the dominating mass, would house the club rooms, including the lounge, dining room, grill room, card room, porches, a women's locker room, and possibly members' bedrooms on the second floor. Perhaps adjoining this, but in a separate wing, on the ground floor there would be the men's locker room, wash rooms, valet room, and so forth, but arranged for easy access to the lounge and grill room and with its entrance doorway conveniently near the first tee and 18th green. Another wing would be devoted exclusively to service, including the kitchen, serving room, laundry, servants' dining room and servants' bedrooms above. Grouped around the main entrance there would be such rooms as the entrance hall, office, waiting room and such other rooms as are necessary, depending on the needs of the particular club. These needs vary con-



*Photos. Trowbridge*

ABOVE, GENERAL VIEW  
OF ENTRANCE FRONT  
AND DRIVE. BELOW, A  
PINE PANELED ROOM

MILWAUKEE COUN-  
TRY CLUB. FITZ-  
HUGH SCOTT AND  
ROGER H. BULLARD,  
ASSOCIATE ARCHTS.



Interior Decoration Un-  
der the Supervision of  
Roger H. Bullard and  
Elizabeth Parker



Women's Locker Room

Fireplace in Lounge

Milwaukee Country Club.  
Fitzhugh Scott and Roger H.  
Bullard, Associate Architects

siderably, from those of the club which is almost a hotel, such as the Westchester-Biltmore Country Club at Rye, N. Y.,—which fosters every sport in its season, including golf, tennis, polo, swimming, trap shooting, racing, skating, etc., and which includes housekeeping apartments, barber shops and so forth,—to the simple club of 50 members in a small village where a 9-hole golf course and a building with locker room and lounge,—not forgetting a fireplace,—are sufficient alone to satisfy the needs of its members.

But I would hold as most important that the architectural design be of such a character that the club house building becomes actually a part of the landscape. Being a type of building modern in its origin, as in its purpose, it is much more important that its design reflect characteristics of this day than that an attempt be made to associate it with any architectural period of the past. There may be evidence of stylistic ideas and inspiration in its design, by which the traditions of the locality may be reflected; on the other hand, to emphasize them to the detriment of a design that shall be harmonious to the site, expressive of its purpose and in keeping with the character of its fabric, is to ignore the fundamentals on which architecture is firmly established.





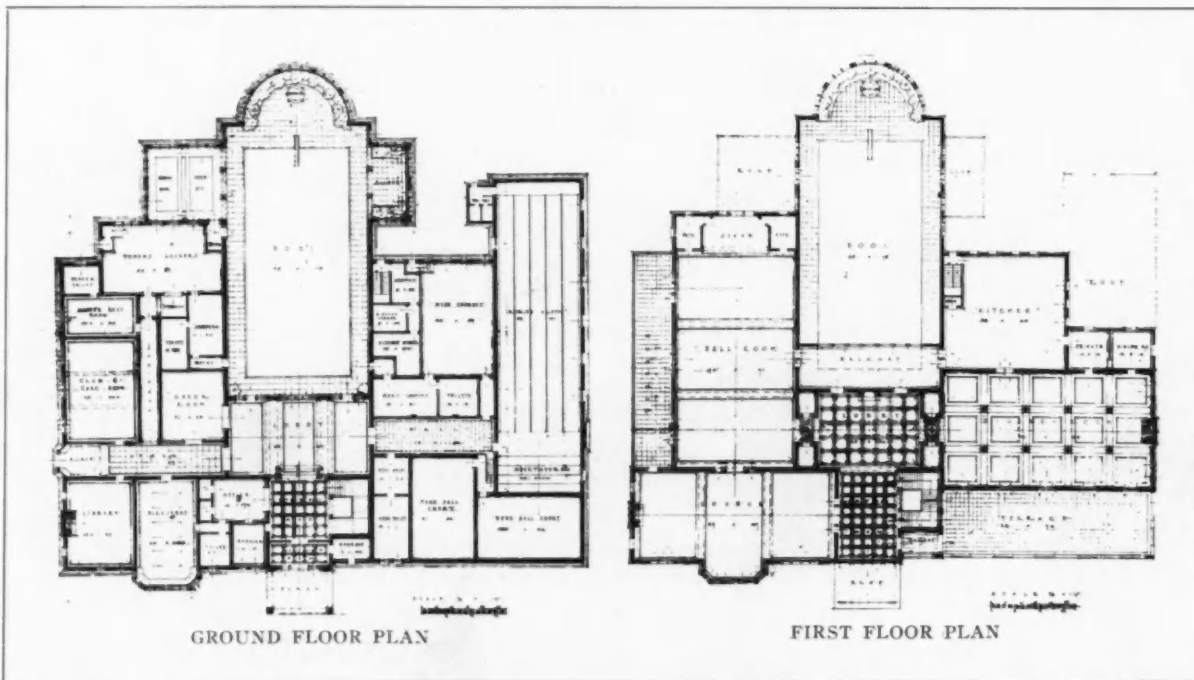
ABOVE, RECEPTION HALL  
BELOW, MAIN DINING ROOM



MILWAUKEE COUNTRY  
CLUB. FITZHUGH SCOTT  
AND ROGER H. BULLARD,  
ASSOCIATE ARCHITECTS

*Photos. Trowbridge*

LOUNGE



SHAWNEE COUNTRY CLUB, WILMETTE,  
ILL. BURNHAM BROTHERS, ARCHITECTS



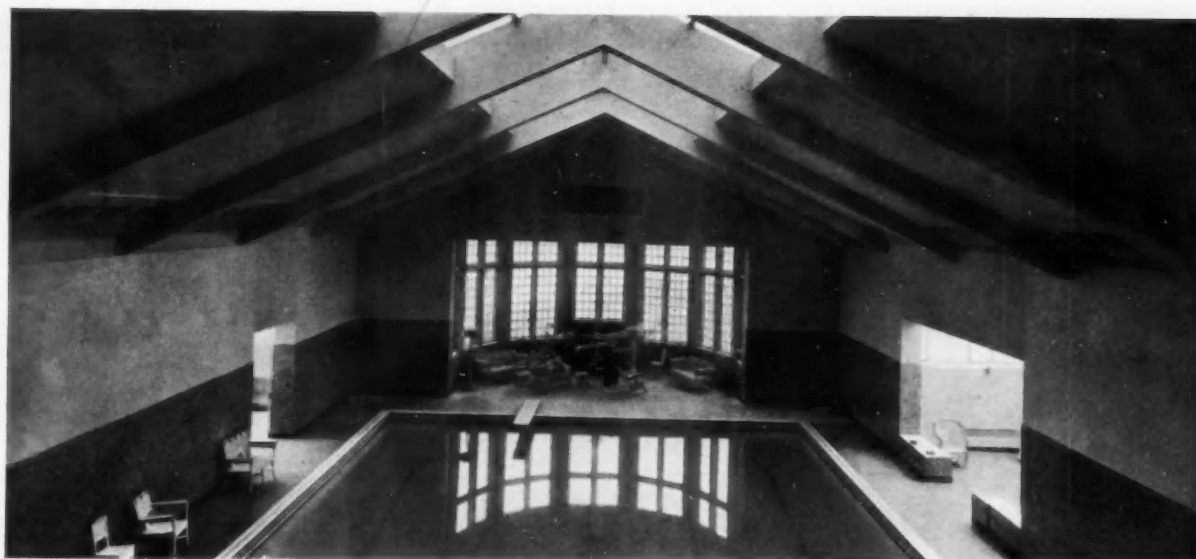
ENTRANCE FRONT



THE BALL ROOM

↓  
SHAWNEE COUNTRY CLUB, WILMETTE,  
ILL. BURNHAM BROTHERS, ARCHITECTS





SWIMMING POOL



MAIN STAIRWAY

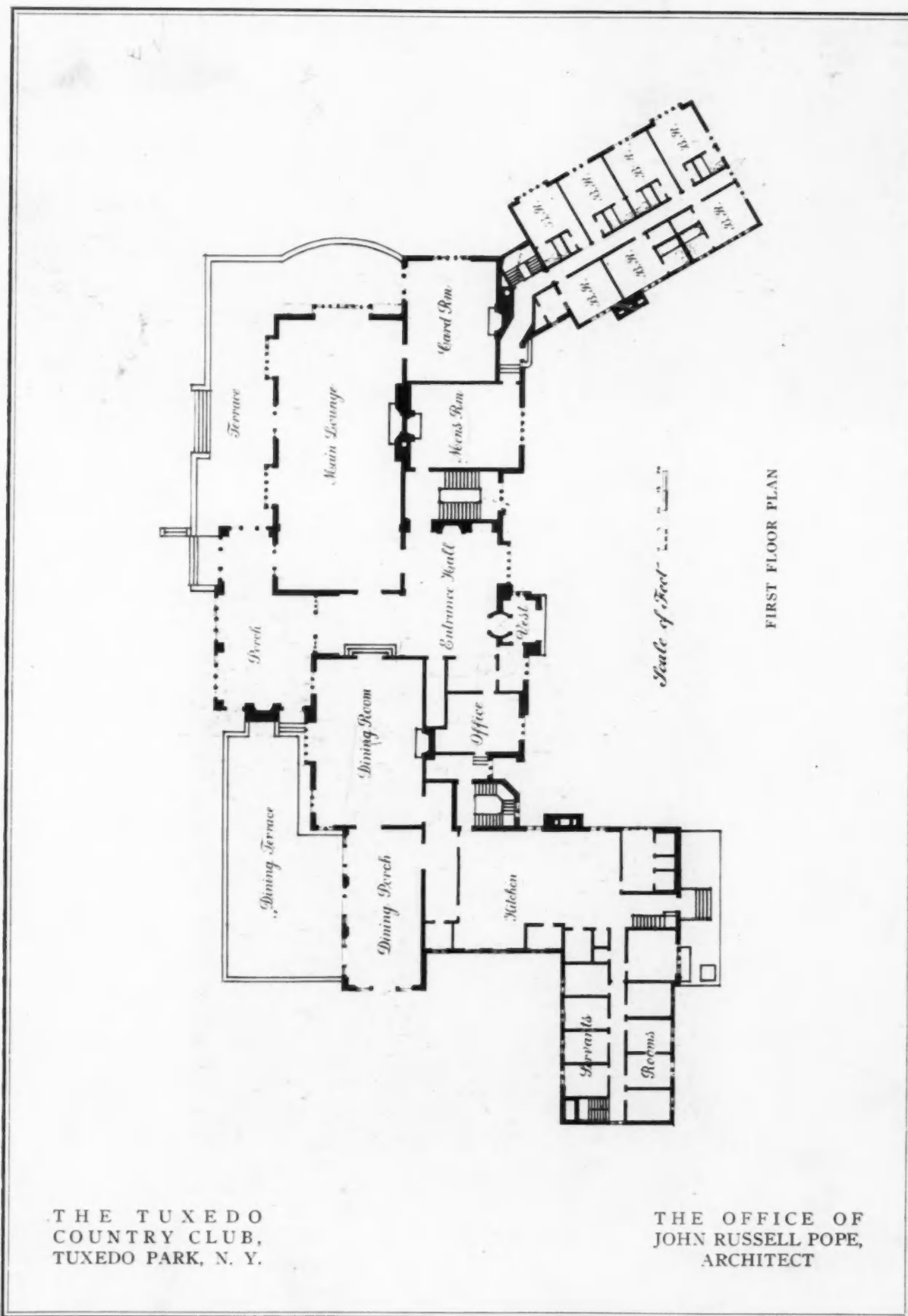
SHAWNEE COUNTRY CLUB, WILMETTE,  
ILL. BURNHAM BROTHERS, ARCHITECTS

## FIVE RECENT GOLF AND COUNTRY CLUBS



*Photos. S. H. Gottscho*

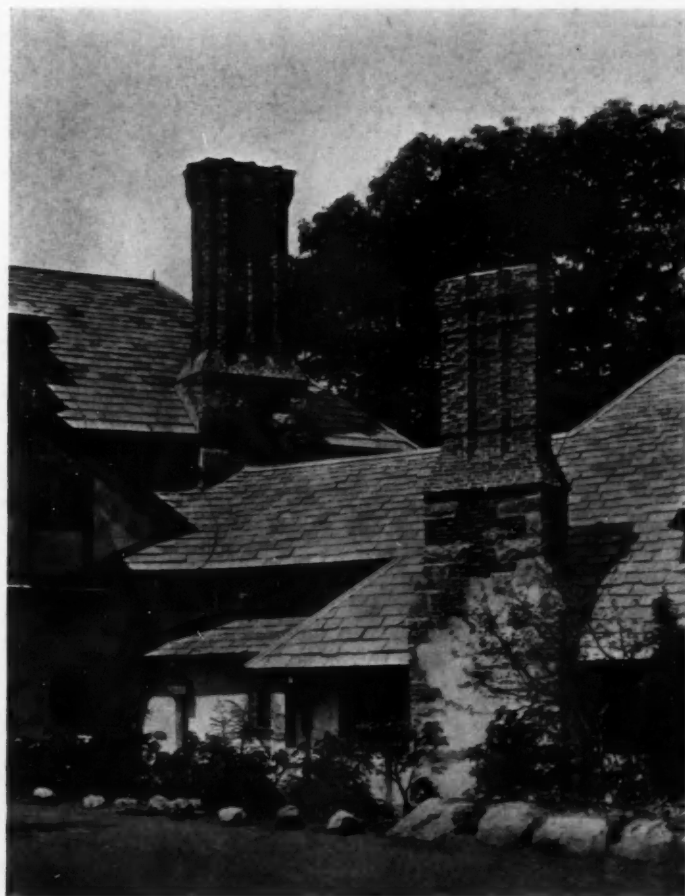
TUXEDO COUNTRY CLUB, TUXEDO PARK, N. Y.  
OFFICE OF JOHN RUSSELL POPE, ARCHITECT







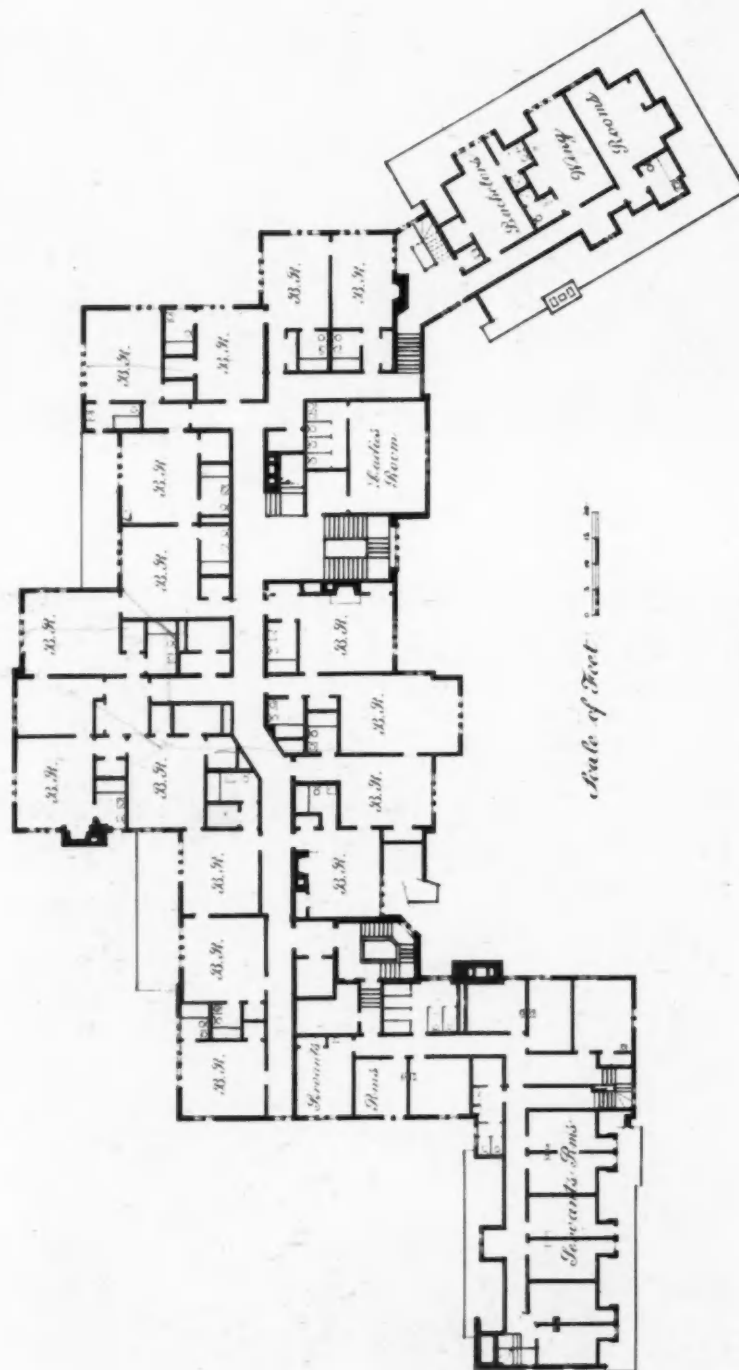
ENTRANCE COURT



BACHELORS' WING

THE TUXEDO  
COUNTRY CLUB,  
TUXEDO PARK, N. Y.

THE OFFICE OF  
JOHN RUSSELL POPE,  
ARCHITECT



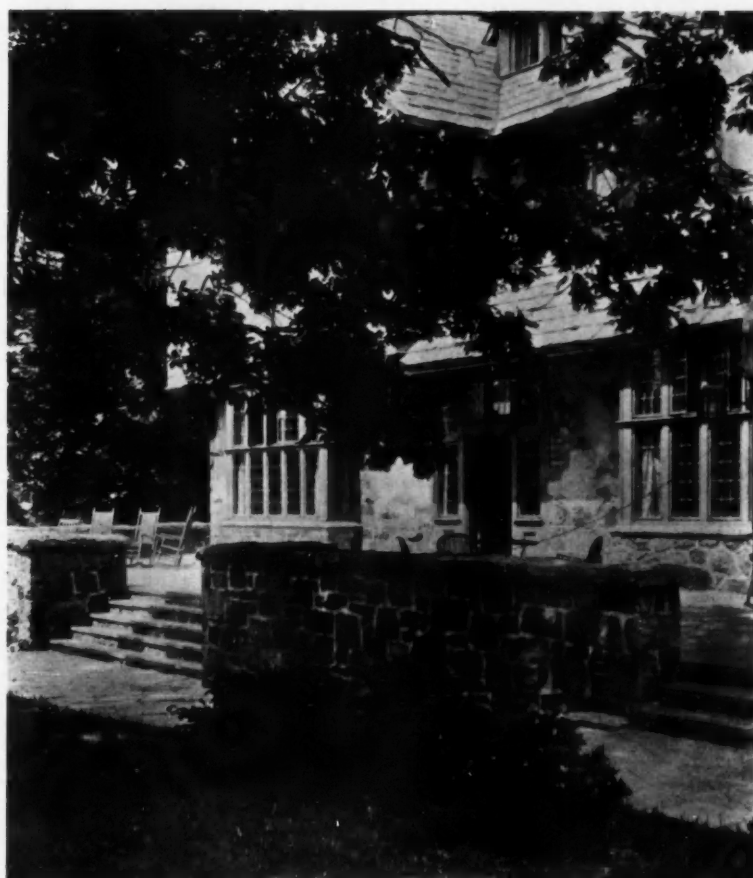
SECOND FLOOR PLAN

THE TUXEDO  
COUNTRY CLUB  
TUXEDO PARK, N. Y.

THE OFFICE OF  
JOHN RUSSELL POPE  
ARCHITECT



SOUTHWEST TERRACE ADJOINING MAIN LOUNGE



TERRACE ENTRANCE TO MAIN LOUNGE

THE TUXEDO  
COUNTRY CLUB  
TUXEDO PARK, N. Y.

THE OFFICE OF  
JOHN RUSSELL POPE  
ARCHITECT



### COST AND CONSTRUCTION DATA

YEAR OF COMPLETION: 1928.

TYPE OF CONSTRUCTION: Masonry and wood framing.

EXTERIOR MATERIALS: Rubble stone, stucco and timber.

INTERIOR MATERIALS: Plaster finish and wood trim.

ROOF CONSTRUCTION: Wood framing, slate finish.

WINDOWS: Metal casements, leaded glass, Venetian blinds.

FLOORS: Oak in living rooms, pine in bedrooms, terrazzo in public service rooms.

HEATING: Vapor vacuum steam and return. Coal-burning.

VENTILATING: Mechanical in all service rooms and toilets.

KITCHEN EQUIPMENT: Modern heavy duty hotel type.

NUMBER OF BEDROOMS: 21 double masters, 10 single for bachelors, 40 for servants.

NUMBER OF CUBIC FEET: 679,601.

COST PER CUBIC FOOT: Approximately 77 cents.

TOTAL COST: \$526,116.59.

TUXEDO COUNTRY CLUB, TUXEDO PARK, N. Y.  
OFFICE OF JOHN RUSSELL POPE, ARCHITECT



MAIN LOUNGE



CARD ROOM

THE TUXEDO  
COUNTRY CLUB,  
TUXEDO PARK, N. Y.

THE OFFICE OF  
JOHN RUSSELL POPE,  
ARCHITECT







DINING ROOM

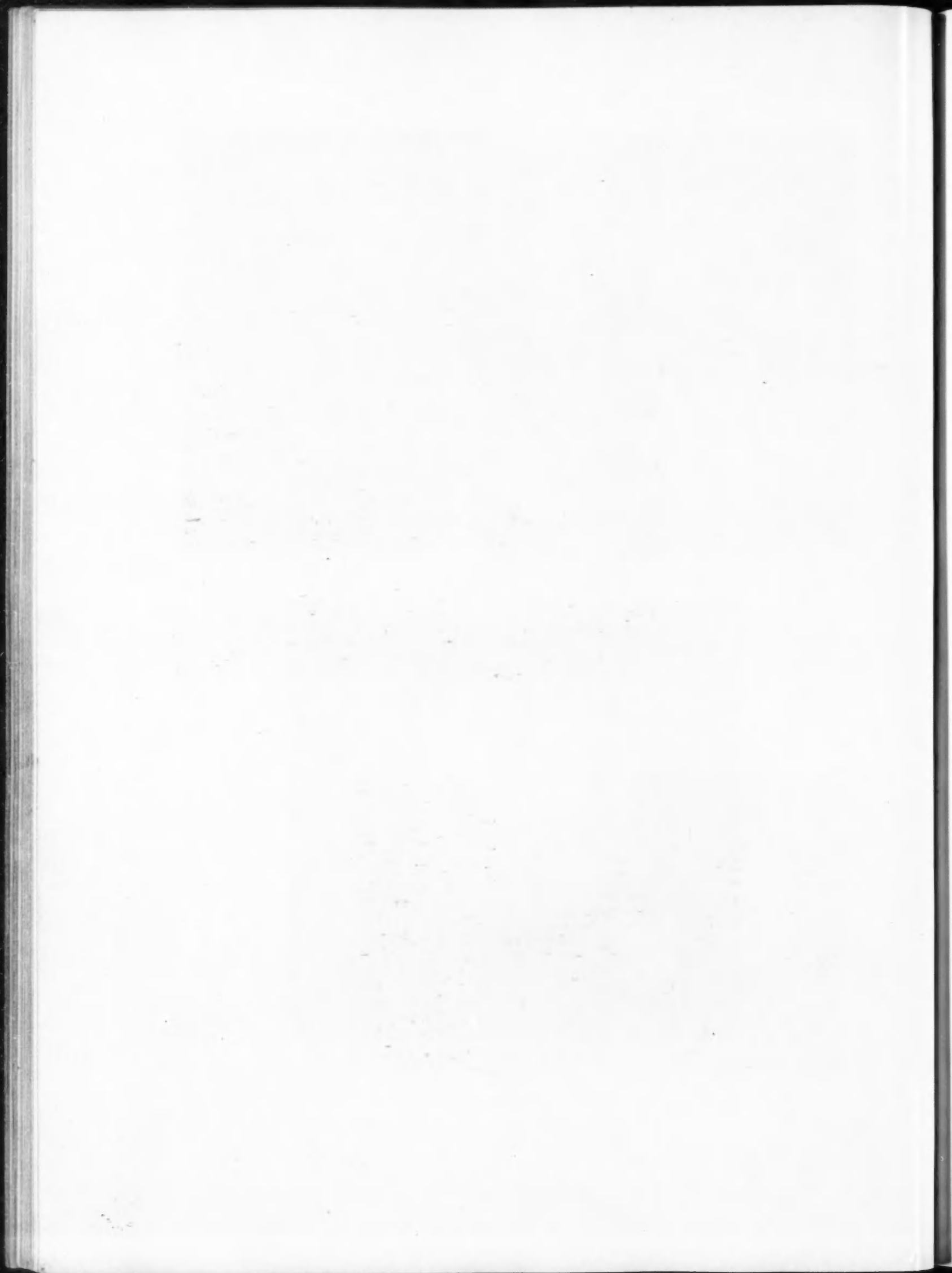


ENTRANCE TO DINING ROOM

THE TUXEDO  
COUNTRY CLUB  
TUXEDO PARK, N. Y.

THE OFFICE OF  
JOHN RUSSELL POPE  
ARCHITECT







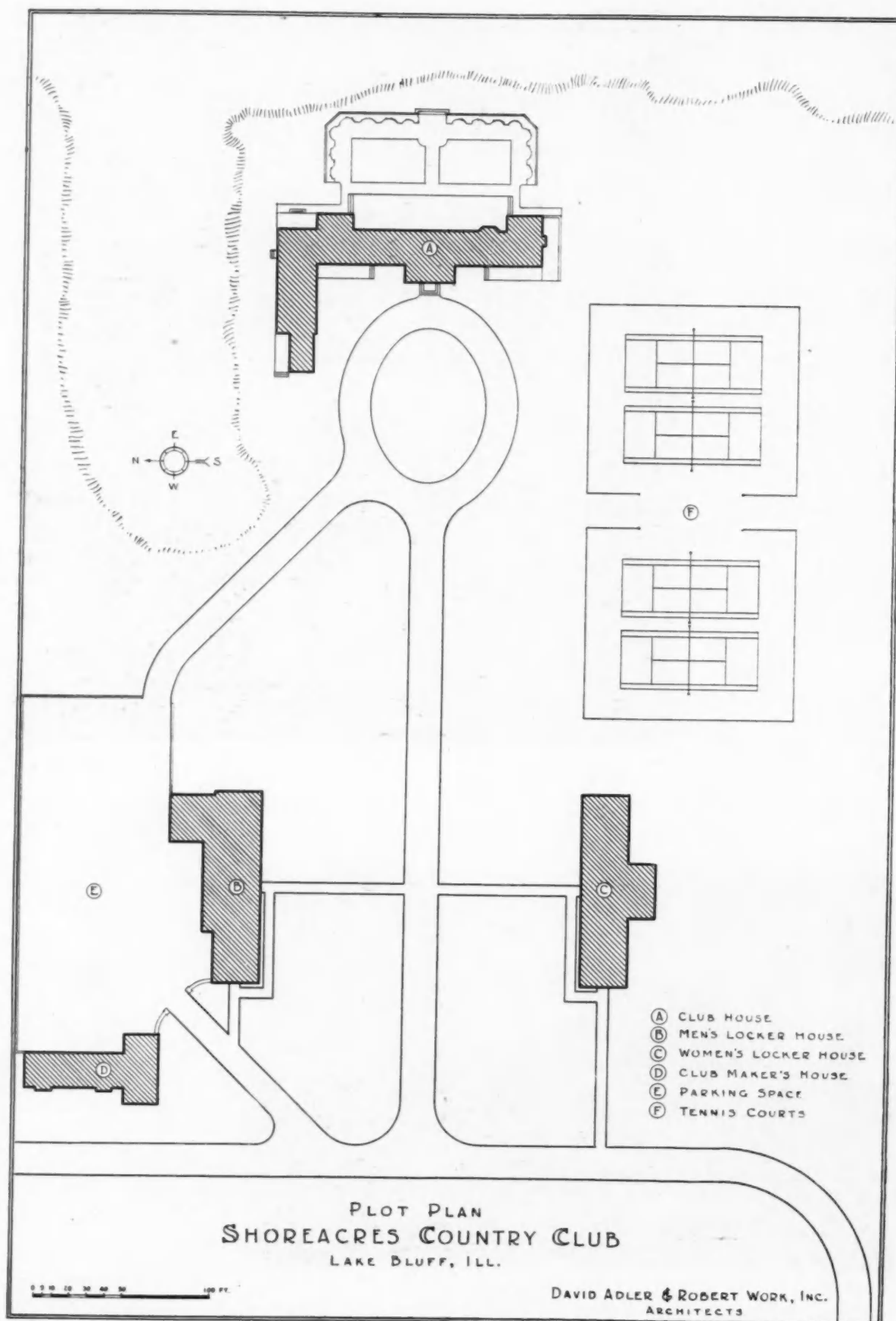
MAIN ENTRANCE

SHOREACRES COUNTRY  
CLUB, LAKE BLUFF, ILL.  
DAVID ADLER & ROBERT  
WORK, INC., ARCHITECTS



EAST ELEVATION





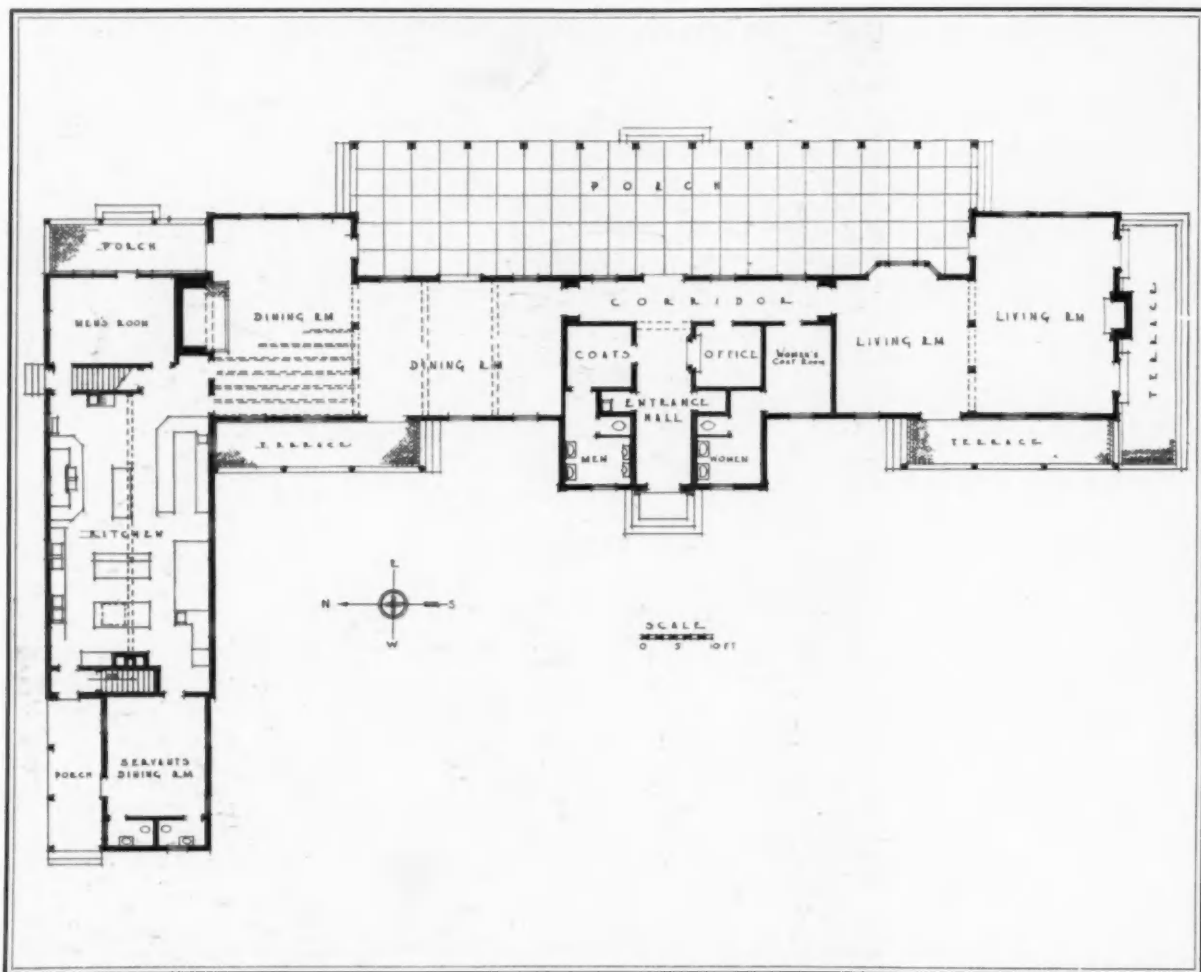


ENTRANCE HALL

SHOREACRES COUNTRY  
CLUB, LAKE BLUFF, ILL.  
DAVID ADLER & ROBERT  
WORK, INC., ARCHITECTS



DINING ROOM



FIRST FLOOR PLAN

SHOREACRES COUNTRY  
CLUB, LAKE BLUFF, ILL.  
DAVID ADLER & ROBERT  
WORK, INC., ARCHITECTS





NORTH LIVING ROOM

SHOREACRES COUNTRY  
CLUB, LAKE BLUFF, ILL.  
DAVID ADLER & ROBERT  
WORK, INC., ARCHITECTS



SOUTH LIVING ROOM

#### CONSTRUCTION DATA

TYPE OF CONSTRUCTION: Frame.

EXTERIOR MATERIALS: Siding.

INTERIOR MATERIALS: Part wood paneled and part plaster walls.

ROOF CONSTRUCTION: Shingle.

WINDOWS: Wood, double-hung.

FLOORS: Wood.

HEATING: Vapor.

VENTILATING: Gravity.

NUMBER OF MEMBERS: 250.

NUMBER OF CUBIC FEET: 189,605.

SHOREACRES COUNTRY  
CLUB, LAKE BLUFF, ILL.  
DAVID ADLER & ROBERT  
WORK, INC., ARCHITECTS



*Photos. Ellison*

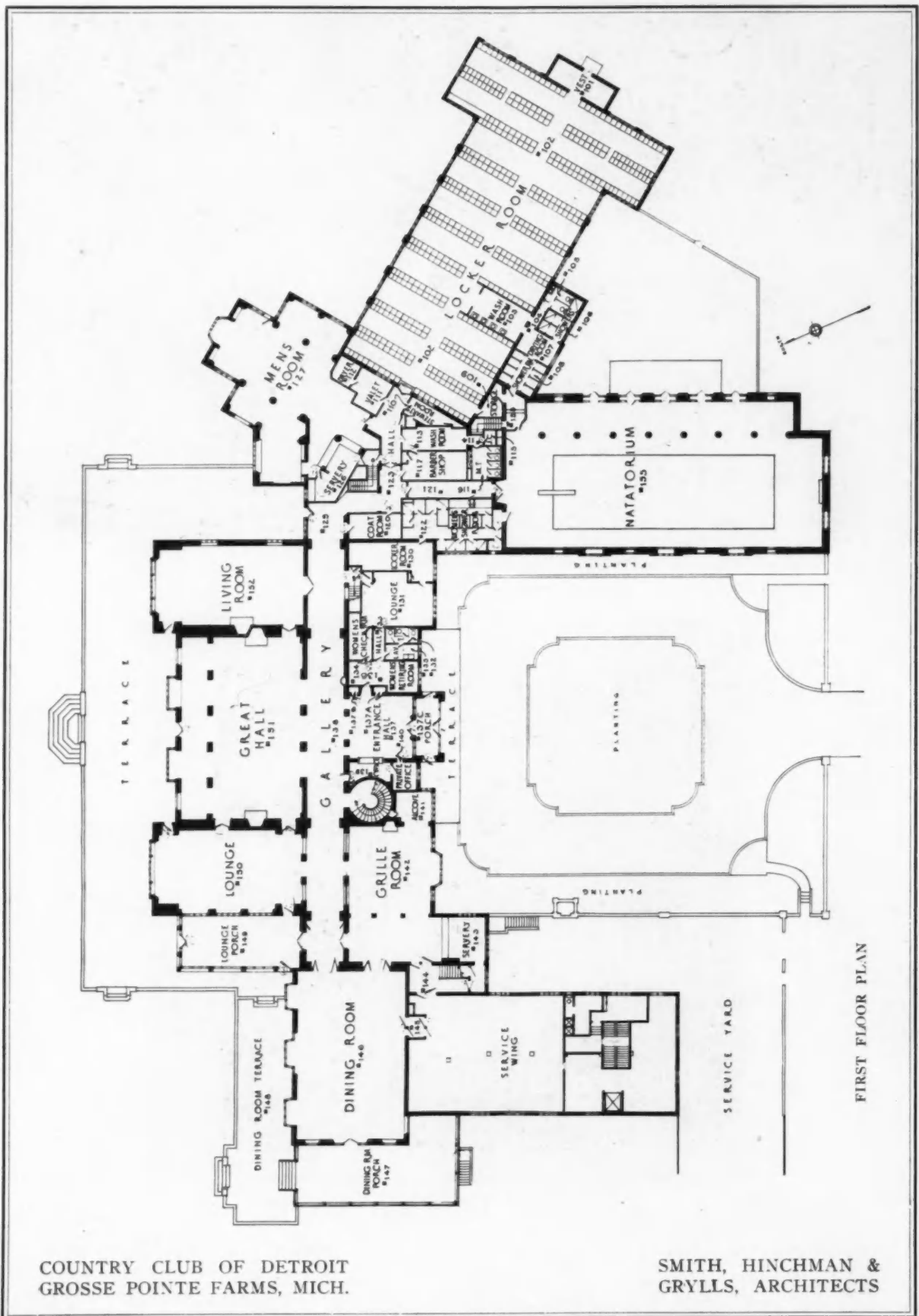
SOUTH ELEVATION FROM THE GOLF LINKS



TERRACE

COUNTRY CLUB OF DETROIT  
GROSSE POINTE FARMS, MICH.

✓  
SMITH, HINCHMAN &  
GRYLLS, ARCHITECTS







GREAT HALL



ENTRANCE HALL

COUNTRY CLUB OF DETROIT  
GROSSE POINTE FARMS, MICH.

SMITH, HINCHMAN &  
GRYLLS, ARCHITECTS



SMITH, HINCHMAN &  
GRYLLS, ARCHITECTS



LIVING ROOM



MEN'S ROOM

COUNTRY CLUB OF DETROIT  
GROSSE POINTE FARMS, MICH.

SMITH, HINCHMAN &  
GRYLLS, ARCHITECTS

#### COST AND CONSTRUCTION DATA

YEAR OF COMPLETION: 1927.

TYPE OF CONSTRUCTION: Wall-bearing fireproof.

EXTERIOR MATERIALS: Pressed brick, timber, plaster, slate roof.

INTERIOR MATERIALS: Stone, plaster, hewed oak, tile, brick.

ROOF CONSTRUCTION: Steel rafters and purlins, cement, variegated slate.

WINDOWS: Metal casements, leaded glass.

FLOORS: Oak and teak plank, stone, slate, tile

HEATING: Direct and indirect steam.

VENTILATING: Exhaust system.

NUMBER OF MEMBERS: 700.

NUMBER OF BEDROOMS: 13.

NUMBER OF CUBIC FEET: 867,000.

COST PER CUBIC FOOT: 75 cents.

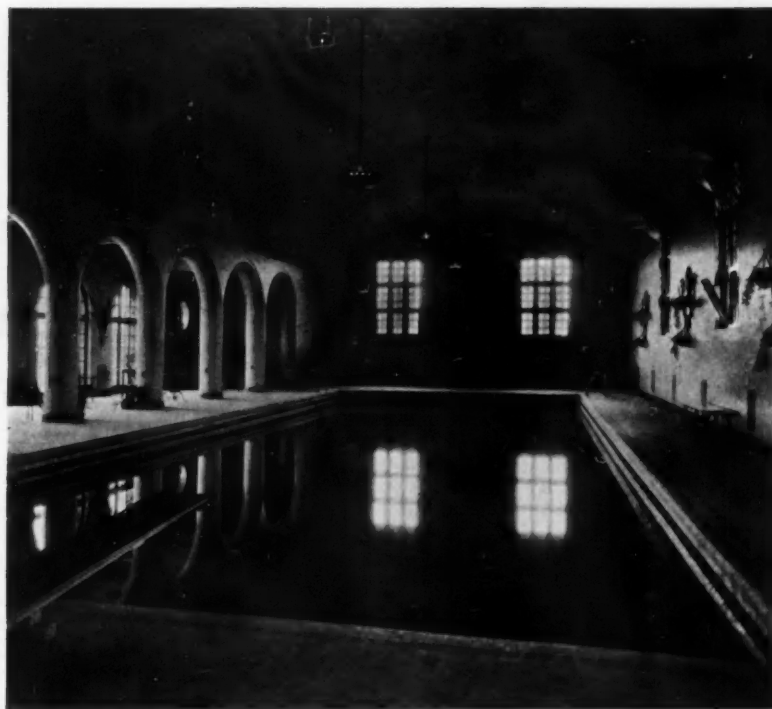
TOTAL COST: \$650,000.

COUNTRY CLUB OF DETROIT, GROSSE  
POINTE FARMS, MICH. SMITH,  
HINCHMAN & GRYLLS, ARCHITECTS





MAIN DINING ROOM



SWIMMING POOL

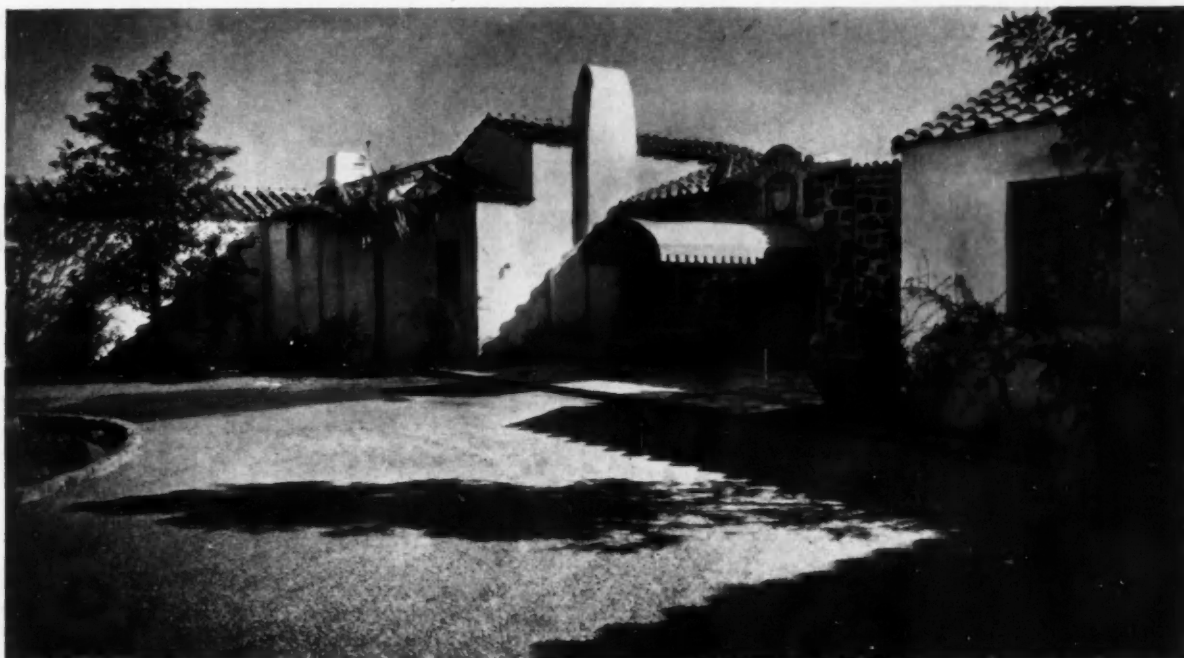
COUNTRY CLUB OF DETROIT  
GROSSE POINTE FARMS, MICH.

SMITH, HINCHMAN &  
GRYLLS, ARCHITECTS





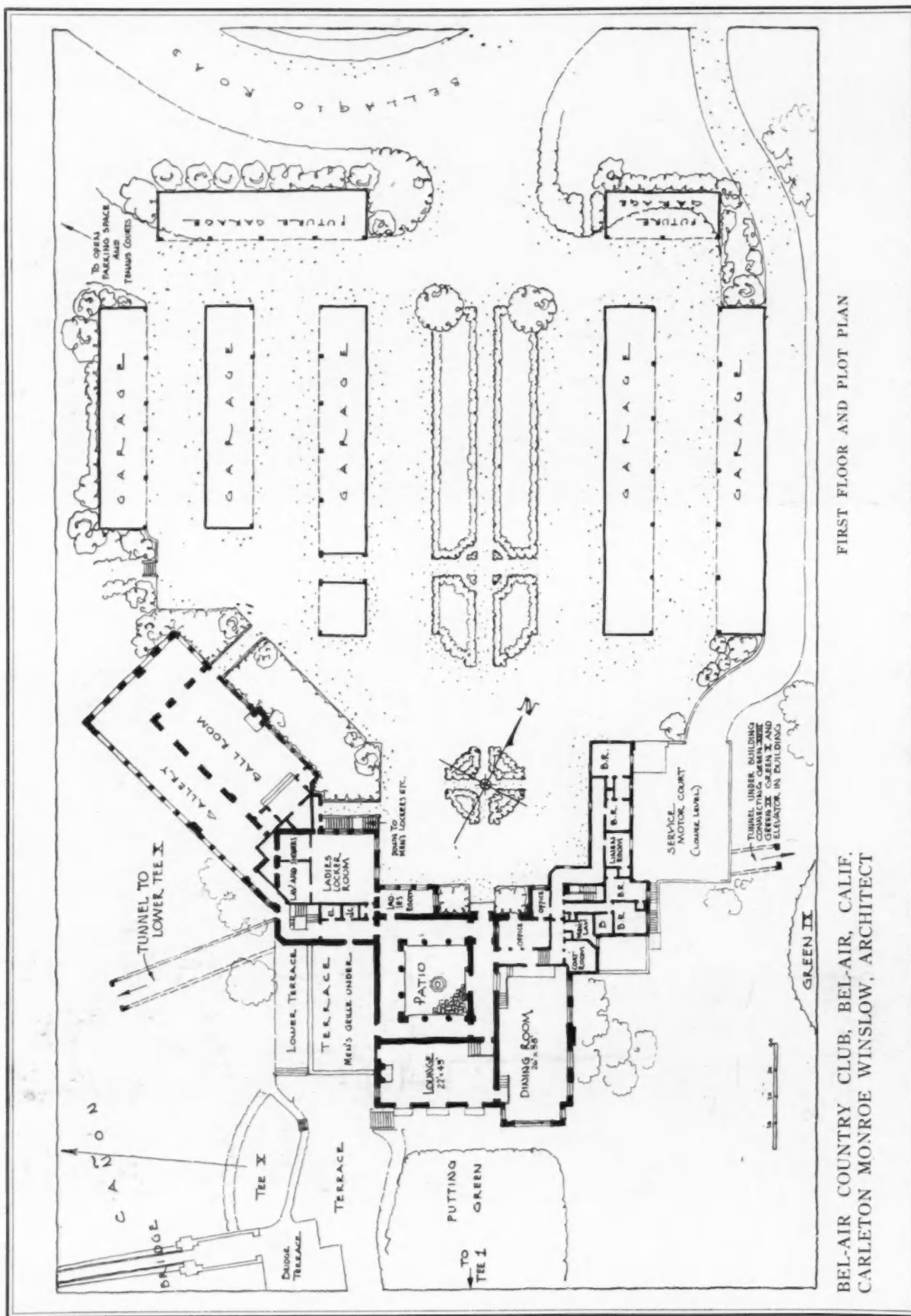
VIEW OF CLUB FROM ACROSS RAVINE



*Photos. Mott Studios*

FORECOURT AND MAIN ENTRANCE

BEL-AIR COUNTRY CLUB, BEL-AIR, CALIF.  
CARLETON MONROE WINSLOW, ARCHITECT



FIRST FLOOR AND PLOT PLAN

BEL-AIR COUNTRY CLUB, BEL-AIR, CALIF.  
CARLETON MONROE WINSLOW, ARCHITECT





ROUGH STONE AND STUCCO COVERED WALLS, TILE ROOFS AND ARCADES GIVE SPANISH CHARACTER TO CLUB HOUSE



BEL-AIR COUNTRY CLUB, BEL-AIR, CALIF.  
CARLETON MONROE WINSLOW, ARCHITECT



### COST AND CONSTRUCTION DATA

YEAR OF COMPLETION: 1926.

TYPE OF CONSTRUCTION: Substructure, reinforced concrete; above, part solid stone masonry and part heavy frame covered with metal lath and cement stucco.

EXTERIOR MATERIALS: Stone and stucco.

INTERIOR MATERIALS: Plaster on metal lath, with the stone masonry appearing inside in part.

ROOF CONSTRUCTION: Heavy frame with clay roofing tile of Italian type.

WINDOWS: Wood and metal frames.

FLOORS: Cement, tile and oak.

HEATING: Steam.

KITCHEN EQUIPMENT: Complete regular equipment.

NUMBER OF MEMBERS: 255.

TOTAL COST: \$190,621.70, not including architect's commission or furnishings.

BEL-AIR COUNTRY CLUB, BEL-AIR, CALIF.  
CARLETON MONROE WINSLOW, ARCHITECT

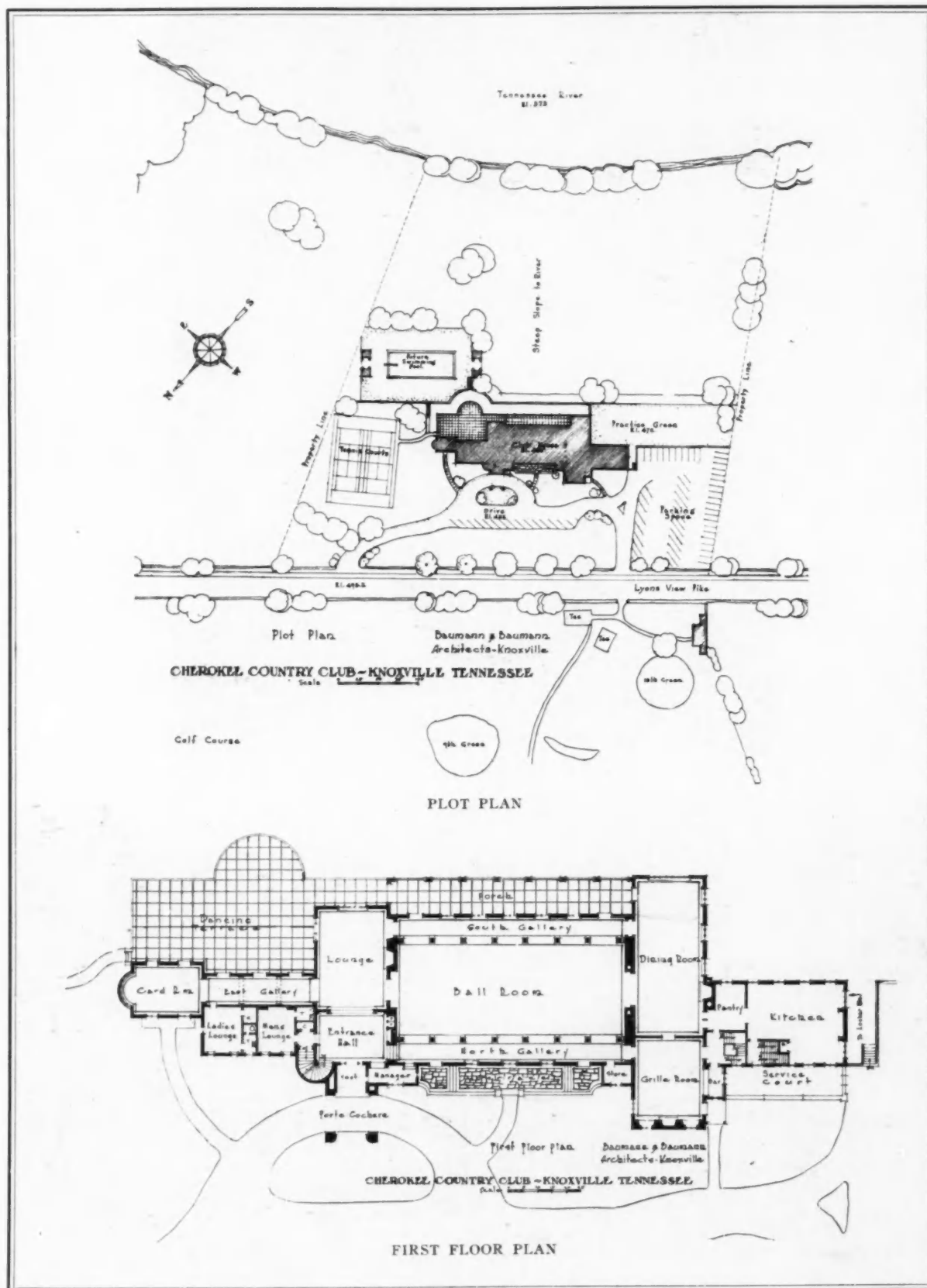


PORTE COCHÈRE



*Photos. Tebbs & Knehl, Inc.*

CHEROKEE COUNTRY CLUB, KNOXVILLE  
BAUMANN & BAUMANN, ARCHITECTS



CHEROKEE COUNTRY CLUB, KNOXVILLE  
BAUMANN & BAUMANN, ARCHITECTS



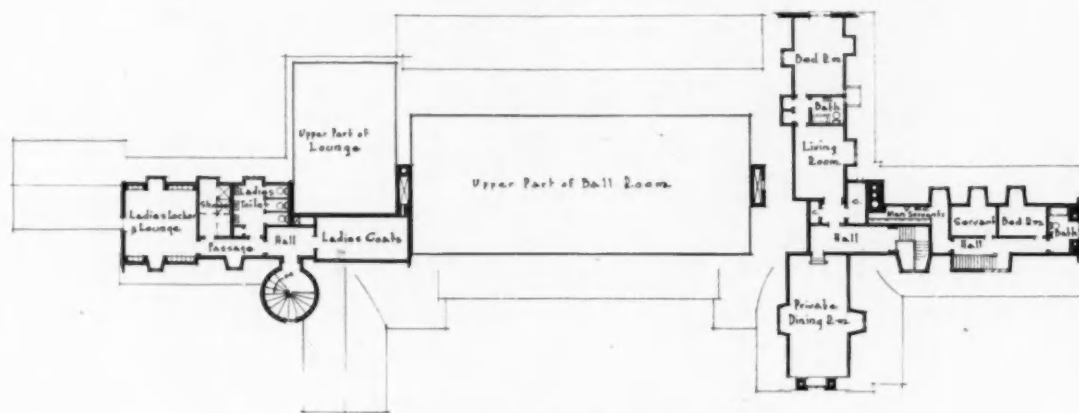


LOUNGE

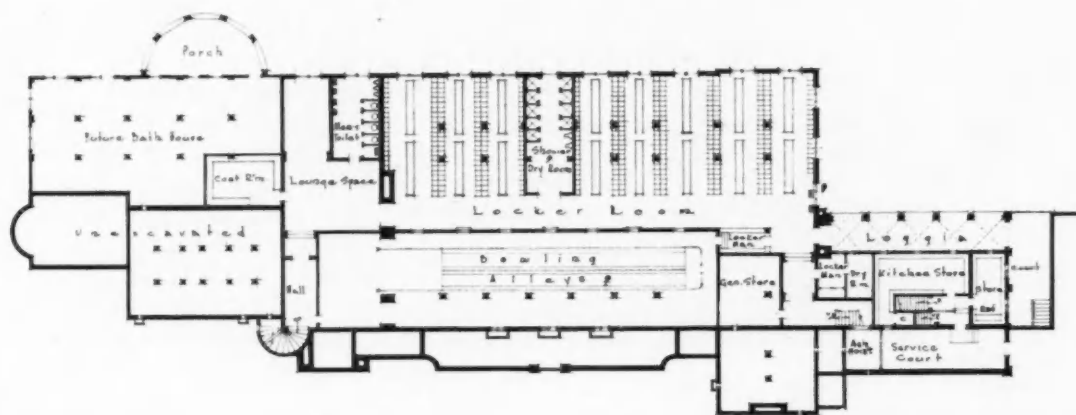


BALL ROOM

✓ CHEROKEE COUNTRY CLUB, KNOXVILLE  
BAUMANN & BAUMANN, ARCHITECTS



SECOND FLOOR PLAN



BASEMENT PLAN

#### COST AND CONSTRUCTION DATA

YEAR OF COMPLETION: 1928.

TYPE OF CONSTRUCTION: Masonry exterior walls, frame partitions and roof.

EXTERIOR MATERIALS: Stucco, brick, stone, timber.

INTERIOR MATERIALS: Wood, plaster, flagstone.

ROOF CONSTRUCTION: Flagstone over frame.

WINDOWS: Wood and steel.

FLOORS: Oak and flagstone.

HEATING: Vacuum-vapor steam.

VENTILATING: Forced gravity.

KITCHEN EQUIPMENT: Gas, steam, electric.

NUMBER OF MEMBERS: 400.

NUMBER OF CUBIC FEET: 373,862.

COST PER CUBIC FOOT: 52 cents, including all equipment and furnishings.

TOTAL COST: \$145,952.31.

CHEROKEE COUNTRY CLUB, KNOXVILLE  
BAUMANN & BAUMANN, ARCHITECTS

# PLANNING THE CLUB HOUSE

BY  
ROBERT O. DERRICK  
ARCHITECT

THE enormous development of country clubs throughout the United States, particularly, during the past 20 years, and planning the club houses necessary to accommodate the members, have thrown this type of architectural design into a very specialized class. For this reason country club building committees should select their architects from the ranks of those familiar and experienced with such work, and if possible from among architects who are themselves club members, and above all, club users. Listening to their advice will almost always develop less costly and much better results.

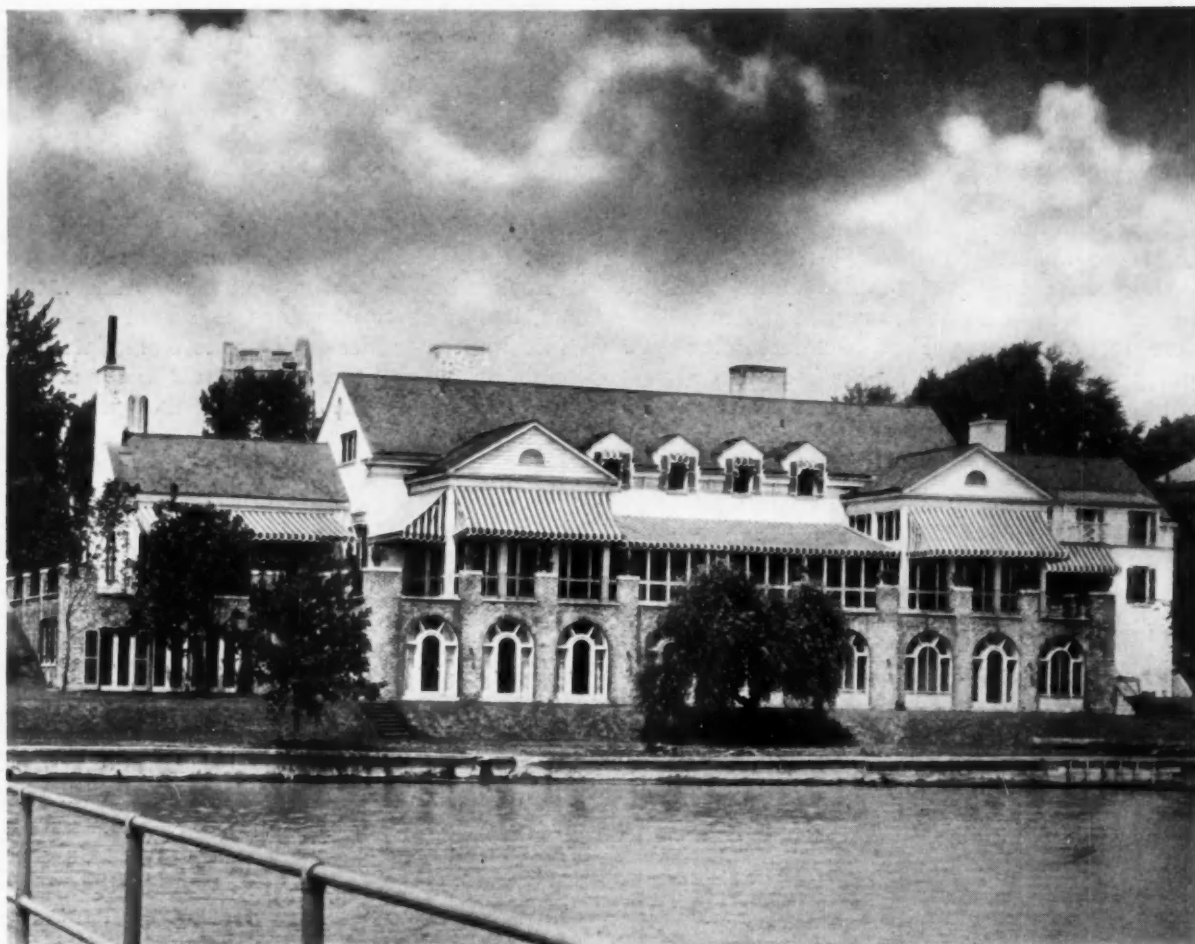
**LOCATION.** Too often is the architect called in after the grounds,—which may contain a golf course or two, polo fields, tennis courts and swimming pool,—have been planned and had their development started, and sometimes completed. The latter is often true where an old building has been used to temporarily house the membership. So much depends on the location of the club house in relation to the first and tenth tees and the ninth and 19th greens of the modern golf course, the tennis courts, the polo field and other activities, that to place the club house after all this has been determined makes the task doubly hard for the architect. If it all could be worked out together, a more nearly ideal solution would result in most cases. The orientation is of great importance in every instance, and in golf clubs perhaps more so in order that the club porches and terraces may overlook the ninth and 18th fairways and greens and the first and tenth tees, and still be shaded in the late afternoon. A view of the polo field should be considered as well as a view of the tennis courts, and all the time the orientation of the different rooms or units of the club house itself should be given careful study.

**GENERAL PLAN.** In the case of golf clubs, the men's locker room is of chief importance and must be easily accessible to the first tee and the professional's shop, with porches and terraces and with dining rooms and dining porches facing east to avoid the glare and heat of the late afternoon sun. Other rooms should be arranged as far as possible to obtain good views and their reasonable share of sunshine. One very general but important consideration in modern country club design is the excellent tendency to develop them along more intimate and informal lines,

giving them as far as possible a domestic character. This is naturally more easily obtained in smaller buildings, for from 150 to 250 members, but much can be done to secure the same effect in houses designed to accommodate 750 members and even more. The reason for such a consideration may lie in the fact that people are not building the enormous houses of the past or having large and complicated staffs of servants to operate them. Rather are they depending on the use of country clubs for larger and often for even smaller social functions, and also for the housing and entertainment of their out of town guests, thus gaining relief from the problem of providing extra service in their homes.

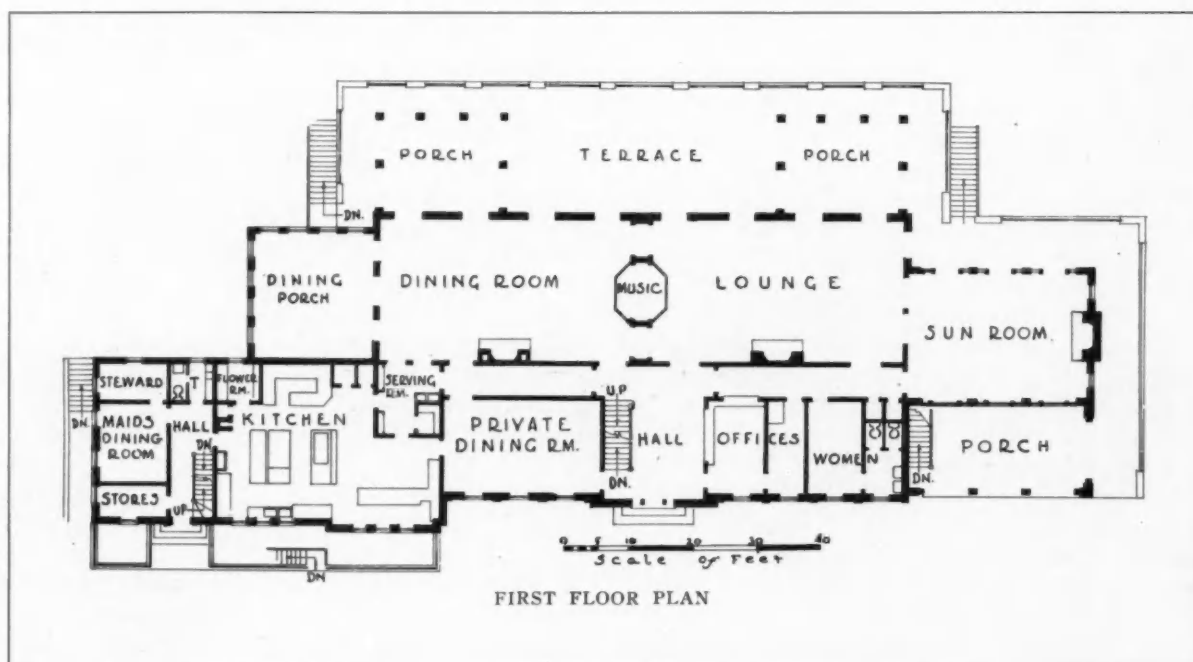
**RELATION OF ROOMS.** In general, the plan of a golf club should be developed along these lines: The locker room unit, and its necessary facilities such as showers, lavatories, pressing room, etc., should be properly located with reference to the first tee and the professional's shop. The men's lounge, if one is to be provided, should be directly accessible from or next to the men's grill room. The more isolated this grill room is from the main part of the club, the better the men will like it. In any event, it should be so designed that as little noise as possible will be heard in the main part of the building. The kitchen and service end of the building must be adjacent to the grill room, and thus the location of the main dining room is determined. Few clubs can stand the expense of operating a kitchen with its staff for each of these units, and therefore the dining room is located next to the kitchen and on the side opposite the grill. It is then obvious that the service department will probably be somewhere near the middle of the building, with serious complications resulting in many instances. It would be far easier to develop an ideal plan having two kitchens and service departments, one for the grill and one for the dining room, or with one unit serving both but on a lower level. Either solution would be considered as an uneconomical practice, however.

The office in a large building should be adjacent to the front entrance for the purpose of control, and it should also have access to the coat room, the service department if possible, telephone booths, and switchboard. In a smaller building, to accommodate not over 250 members, experience shows that an office in such a loca-



*Photos. Ellison*

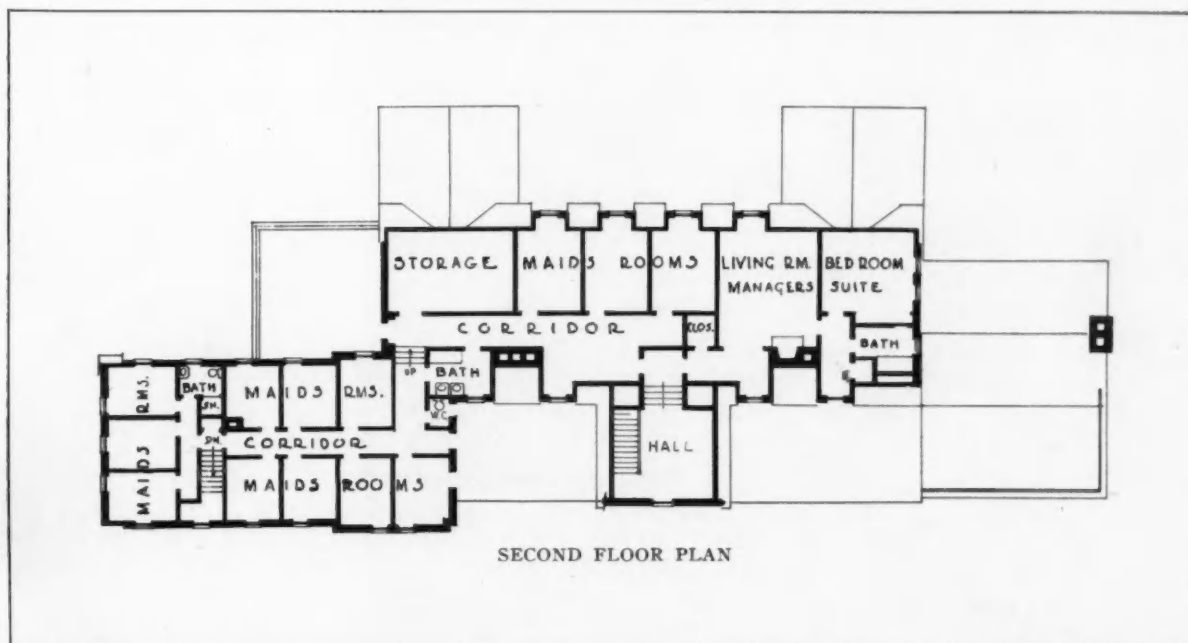
GROSSE POINTE CLUB, GROSSE POINTE,  
MICH. ROBERT O. DERRICK, ARCHITECT.  
B. V. GAMBER, ASSOCIATE ARCHITECT







ENTRANCE DRIVE AND FRONT ELEVATION  
GROSSE POINTE CLUB, GROSSE POINTE,  
MICH. ROBERT O. DERRICK, ARCHITECT  
B. V. GAMBER, ASSOCIATE ARCHITECT





MAIN DINING ROOM,  
DINING PORCH BEYOND



PRIVATE DINING ROOM

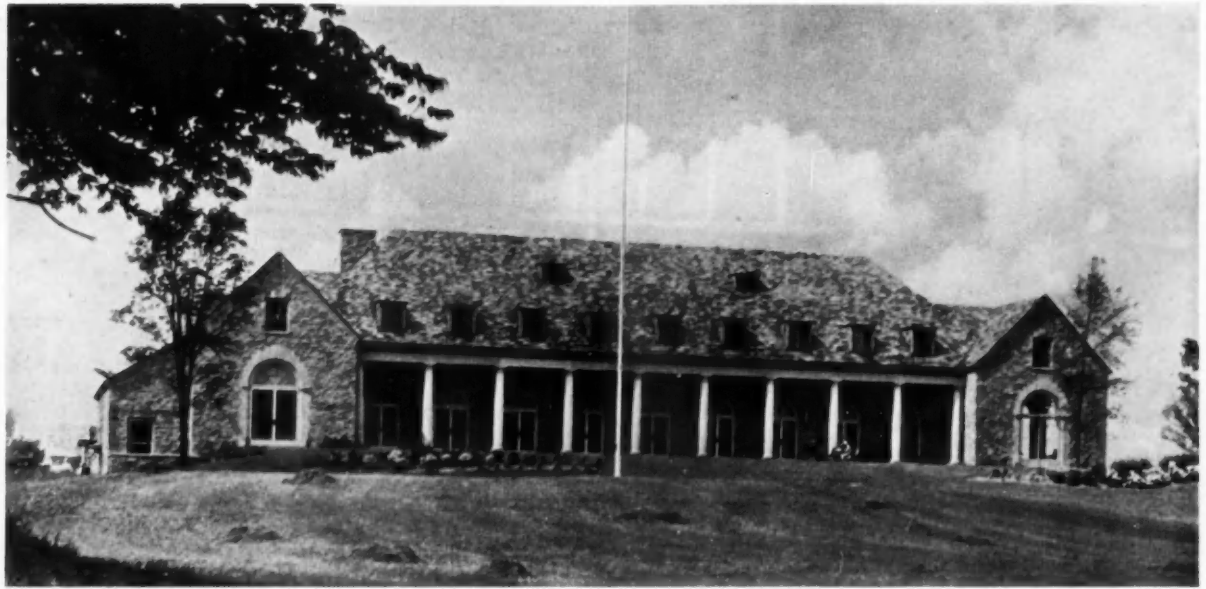
GROSSE POINTE CLUB,  
GROSSE POINTE, MICH.  
R. O. DERRICK, ARCHI-  
TECT, B. V. GAMBER,  
ASSOCIATE ARCHITECT



THE LIVING ROOM



GROSSE POINTE CLUB,  
GROSSE POINTE, MICH.  
R. O. DERRICK, ARCHI-  
TECT, B. V. GAMBER,  
ASSOCIATE ARCHITECT



Photos. Gottscho

View of the South Elevation, Onondaga  
Golf and Country Club, Syracuse, N. Y.  
Peabody, Wilson & Brown, Architects

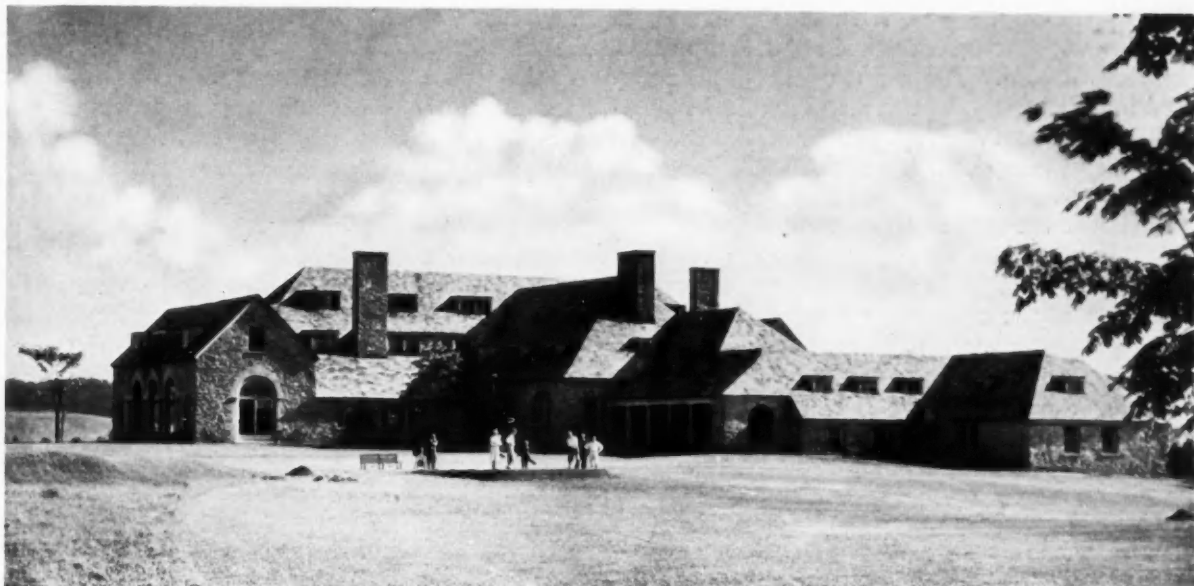
tion can be easily dispensed with, thus adding considerably to the intimate and residential character of the interior. The office in this case could be isolated on the second floor, or located out of sight of and away from the members' part of the building. This definitely places the entrance so that there shall be easy access to the office, dining room, men's unit, service department and lounge, and all arranged so that each unit can be reached without passing through any of the others.

The lounge should naturally have a prominent place in regard to the view and sunlight and should usually be connected with the dining room with wide openings, if possible large enough to throw both rooms more or less into one for large functions. This feature should not, however, eliminate the more isolated entrance to the dining room. In most cases, one or more smaller rooms for cards could open off the lounge or be located near it. If an indoor swimming pool is included, there should be easy access to it from both the men's locker room and the women's dressing rooms. In most cases it would be difficult and unnecessary to attempt to have access to it from the women's locker room as well. If an outdoor pool is considered, it would naturally be placed near the men's locker room, and the cost would be from one third to one half that of the indoor pool. The professional's shop would be ideally located if placed between the men's locker room and the first tee. Care should be taken to have the caddies' quarters and yard as much out of sight and hearing as possible, al-

though every possible convenience and comfort should be supplied there. A generous parking space should be provided near the front entrance, extending to the men's locker room entrance if possible. The women's locker room with showers and lounge should, for economy, usually be placed on the second floor with an outside entrance and stairs. In many cases it is actually preferred in such a location by the women members. The amount of revenue to be derived from bedrooms is usually problematical. In a weekend club they are almost a necessity, especially where the distance from the community the club serves is great. Much money and space can be saved by using a modified dormitory plan for single men, with a general shower and wash room. Rooms with baths must, however, be supplied for couples. Members are likely to abuse the privilege of occupying rooms, but this can easily be prevented by house rules permitting rooms to be occupied by one member for two weeks only, unless they are not in demand.

**LOCKER ROOMS.** To take up the locker room in detail, as one of the most important units, in case of a golf club especially, it is needless to say that enough lockers must be supplied for the golfing members, and that in the case of clubs which hold frequent tournaments, additional locker space, separate if possible, should be supplied for the visitors. Each locker room should have its showers, lavatories and washing facilities centrally located. One attendant's room, with pressing facilities, and a drying room, are important. Perhaps the most economical and





Rear Facade from Golf Links, Onondaga  
Golf and Country Club, Syracuse, N. Y.  
Peabody, Wilson & Brown, Architects

satisfactory plan for a large locker room is rectangular with a wide center aisle running the length of the building. From this center aisle there should run smaller aisles at right angles to it, and preferably not over 15 or 20 feet in length, with lockers on each side. Where sufficient money is available, experience has shown that these side aisles should be about 12 feet clear between lockers to permit the use of furniture for the members rather than the old fashioned center bench. Practice has shown that no matter how attractive a lounge room may be, placed adjoining the locker room, the locker room itself is still the real lounge room, and apparently it always will be. Having lounging space comfortably furnished in or near the center of the locker room itself is excellent, and may often save space in the end. Naturally, the locker room must be above grade, with the best of light, air and ventilation. It is usually wise to avoid using skylights, which generally admit an unpleasant glaring light, and are likely to produce too much heat from the sun. High window sills are obviously practical and necessary. If the locker room lounge is to be a separate room, it can be small, as its general use is doubtful. However, it should have an intimate and informal character.

**THE MEN'S GRILL ROOM** is an extremely important unit and deserves special consideration. Usually the size of the grill may be roughly determined by supplying seating capacity for a number equal to about from 20 to 25 per cent of the number of lockers, and it is well to remember that a crowded room is always more cheer-

ful than a room half filled. Also the type of service is usually very fast, and little waiting for places by members is likely to be done during peak hours. On the other hand, the grill room is often the most popular and the most used room in the club house (except the locker room), and this fact must not be entirely overlooked. It is probably better to make it too small than too large, but in many instances the grill is, and should be, larger than the main dining room, all depending upon the club's location, the type and number of members, and the nature of the club. If the grill is to be a men's room exclusively, the more isolated the better, but the fact that the room is then a grill exclusively and can never be anything else, should be considered. It will not be possible to accommodate an overflow from the dining room and be a part of it, nor can it be used in conjunction with the lounge for dancing. If the club holds frequent tournaments, this fact must be considered in determining the size.

As the grill is essentially the place for intimate gatherings, discussions, and informal meetings, with a considerable amount of good fellowship in the way of talking, singing and conviviality, architecture and decorations should heighten this atmosphere. Although hard materials such as stone, slate or tile may be used on the floor and elsewhere, the fact that the room echoes and reverberates is of little consequence. The singing will sound all the better,—at least to the singers themselves,—just as the old time early morning song in the bathroom convinced the soloist that he was an artist. As the fireplace is usually the

focal point of the grill, it should be entirely in keeping with the design of the room, and be most spacious in size. The bar is usually a necessary and important consideration and should be either in the grill room itself, or in an adjoining alcove, with plenty of space in front and back. The bar, for economic reasons, should also connect with the kitchen, so that direct and immediate service can be maintained.

**THE KITCHEN.** To the kitchen, which is often the heart of the club, too much consideration including all the service features that go with it, can hardly be given. It must be planned to take care of peak loads as well as for the average meals which occur during the week. The club's manager, steward and chef should all be consulted and their opinions considered. Kitchen equipment experts always have valuable suggestions to make. The entire service unit would often, in the average sized club, consist of the kitchen first, a passage or "silent pantry" between the kitchen and the dining room, which passage may also be used for the storage of china, glass, silver and linen, and then storeroom, cold room, receiving room, attendants' dining room and chef's office. In larger clubs there would be, in addition, one or more preparation rooms and perhaps a bake shop. The proper planning of these different units in their relation one to another is usually an important and difficult problem. If it were not for the receiving end, such a service unit located more or less at the center of a building would not be so difficult to handle. The architect should determine, if possible, what the peak load will be. This occurs during tournaments, on Saturdays, Sundays, holidays, and other special occasions. If it is the policy of the club to serve table d'hôte meals on such occasions, eliminating a la carte service entirely, the problem is simplified. In any event, have the space and equipment so designed and arranged that one half the peak load can be handled comfortably. The steward or chef will take care of these heavy loads by hiring more servants temporarily. During the week, when the demands are slight, the arrangement should be such that the minimum staff can take care of the service with the fewest number of steps and the least amount of effort. For instance, one man should take care of two or three tables or departments in slack times, while at peak times there might be two men for each table or department.

**DINING ROOMS.** In planning the dining room it is advisable to have the room too small rather than too large. Nothing is more depressing than an empty room, and nothing puts most people in a better frame of mind than being in a crowd.

If the room must be large, its design and decoration can help tremendously in giving it an informal and residential character, far away from the dignified, stately and formal treatments so often seen in clubs. One or two fireplaces with comfortable lounge furniture grouped about each of them will help to give a domestic atmosphere. Furniture can easily be taken out during the more crowded periods, but on average days it will displace dining tables and give the room a smaller and more intimate appearance. In determining the seating capacity of the dining room, a good rule to follow is to supply sufficient space at from 15 to 20 square feet per person for approximately one half the number of members. This again depends on the type of the club and the membership, and should not apply where the grill room is made more important. If the plan will permit an overflow into the lounge or other adjacent rooms, the size can be cut down and a considerable amount of flexibility still maintained. One or more private dining rooms are nowadays almost always necessary. They can be opened one into the other, and also into the main dining room by means of folding doors, if money and space permit, but often much to the detriment of the appearance of these rooms. As a rule each private dining room should be a complete unit in itself. A storage room near the dining room large enough to accommodate all the dining room furniture, is a tremendous convenience and will allow the room, if so desired, to be cleared for dancing or other entertainments in the shortest time possible.

**THE LOUNGE** is a difficult room to plan, because usually it must be possible for it to take care of a large number of people on special occasions and only a few people on the great majority of days and evenings. Yet it must be cheerful and comfortable at all times. This necessity occurs less often where clubs have ball rooms or so-called "great halls," which are always ready for large entertainments and need have no other character or atmosphere. In cases where the lounge serves both purposes, the proper atmosphere may be obtained by careful architectural detail and decoration, with appropriate furniture placed in intimate groups. All furniture must be fairly easily moved and stored during the larger functions. Fireplaces in the lounge, and in fact in all rooms used by the members, always help, no matter what the desired effect is.

The question of materials is another subject in itself, but suffice it to say that building committees should pay strict attention to this feature and build for permanency. Otherwise, maintenance charges will start almost immediately and will be beyond all bounds within a few years.



*Photos. Gottscho*

ONONDAGA GOLF AND COUNTRY CLUB, SYRACUSE, N. Y. PEABODY, WILSON & BROWN, ARCHITECTS





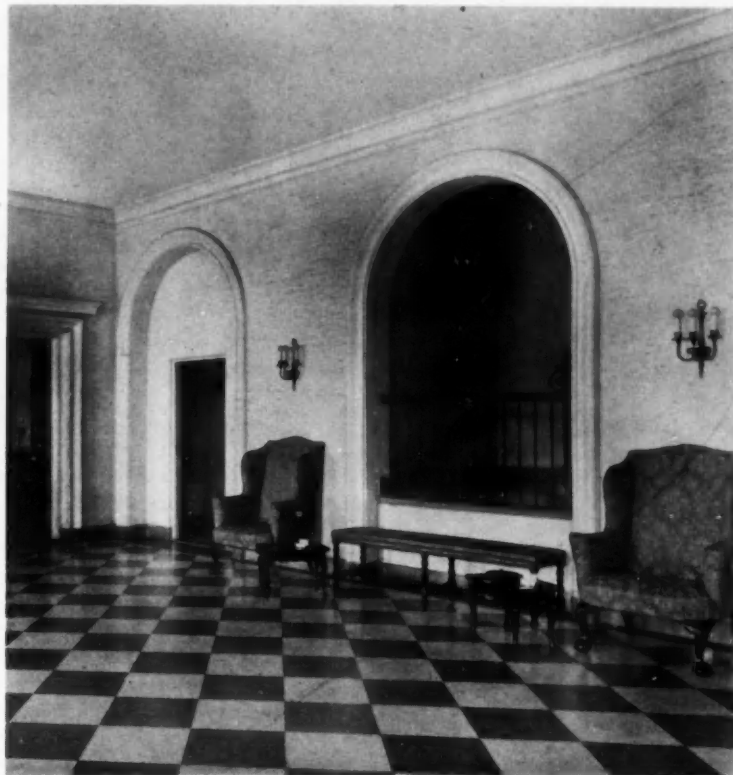
LOGGIA

ONONDAGA GOLF AND COUNTRY  
CLUB, SYRACUSE, N. Y. PEABODY,  
WILSON & BROWN, ARCHITECTS

LIVING ROOM







THE HALL

GRILL ROOM

ONONDAGA GOLF AND COUNTRY CLUB, SYRACUSE, N. Y. PEABODY, WILSON & BROWN, ARCHITECTS



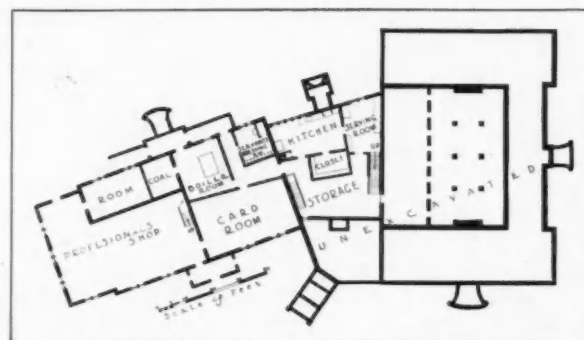


*Photos. Disinger*

THE MCGREGOR GOLF CLUB  
AT SARATOGA SPRINGS, N. Y.  
ALFRED HOPKINS, ARCHITECT



BASEMENT PLAN

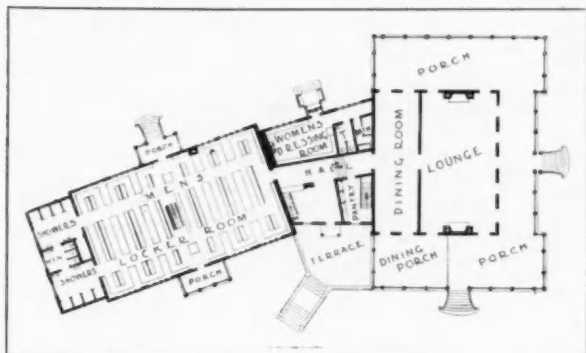




THE MCGREGOR GOLF CLUB  
AT SARATOGA SPRINGS, N. Y.  
ALFRED HOPKINS, ARCHITECT



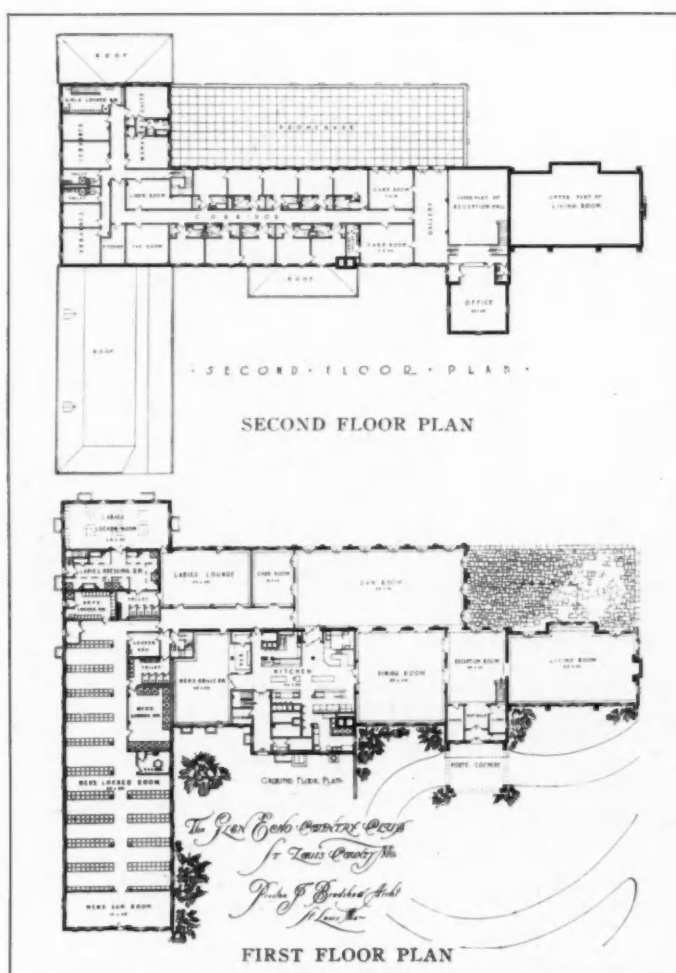
FIRST FLOOR PLAN



ENTRANCE TO MEN'S LOCKER ROOM



GLEN ECHO COUNTRY CLUB  
NORMANDY, MO. PRESTON J.  
BRADSHAW, ARCHITECT





## THE SMALL COUNTRY CLUB HOUSE

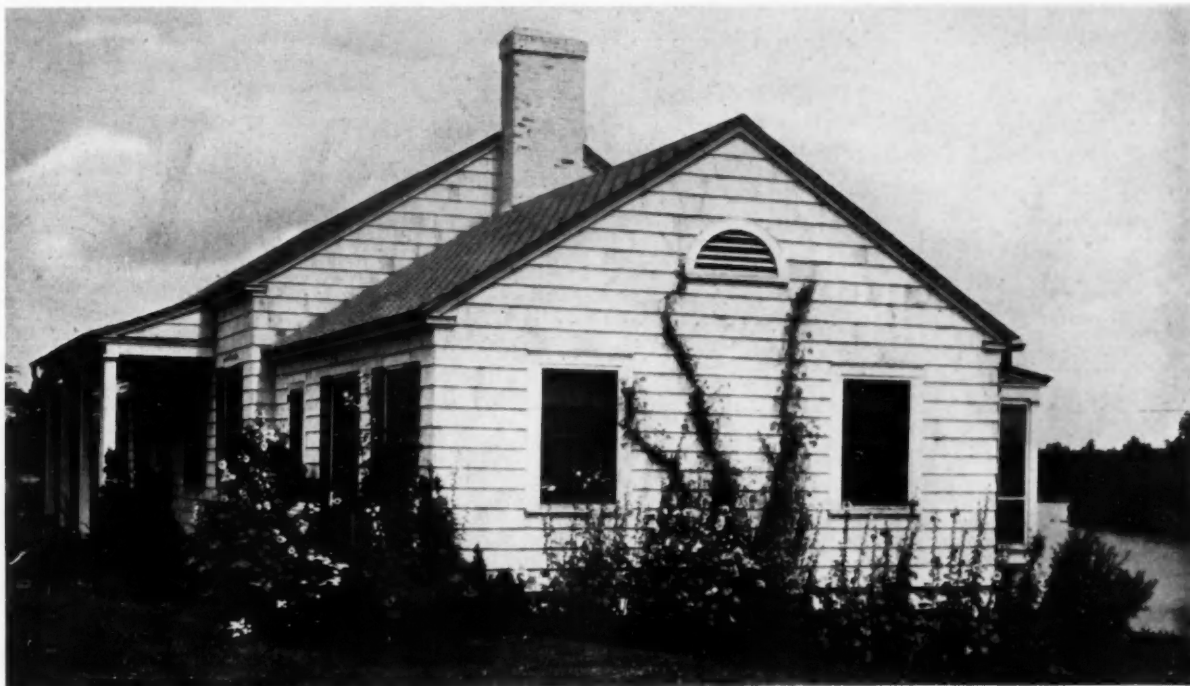
BY  
FRANK C. FARLEY

IN many a community there is a distinct need for a country club planned and operated on a basis which puts its major emphasis on providing, first of all, a good golf course and good tennis courts with the simplest adequate accommodations in lockers, bathing and dressing quarters for the players. Our small and moderate-sized industrial and residential towns demand clubs so carried on that the athletic interests and needs absorb the greater part of the budget, and house service is reduced to a minimum. The social features of the club, however, cannot be entirely subordinated. Some provision must be made for the non-golfing and non-tennis playing members, for the entertainment of guests on tournament days, and for furnishing in the winter months a rallying place to sustain interest in the club.

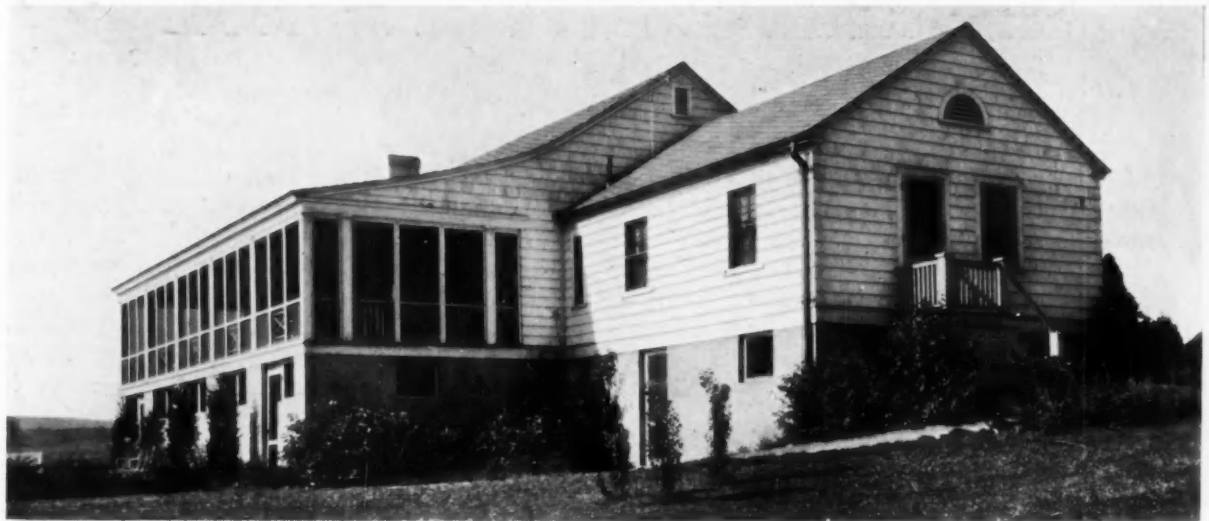
To meet the requirements of the self-service country club house, intended to be operated intensively during the open months and only from time to time during the winter, the needs would seem to be these: (1) Locker rooms with showers and toilet facilities for men and women. (2) Club room for meetings, entertainments, and dancing. An ample porch, preferably overlooking the golf course and tennis courts, capable of being

glassed in, and communicating directly with the main club room. (3) Professional's room and shop, easily accessible from the locker rooms and golf course. (4) Kitchen and pantry where temporary servants or caterers can be installed or where individual members or committees of members can prepare regular meals or casual refreshments. (5) Entrance porch where preferably at least two motor cars can load or unload at the same time.

As the key to the real activities of a club is the size and disposition of the locker rooms, the extent of these rooms must be first determined and, in general, as many full sized lockers as possible provided. Club rooms and kitchens can be compressed if necessary, but not locker space. Steel enameled lockers such as are used in many industrial establishments, provided adequate ventilation is secured, are usually found satisfactory. The only other furniture absolutely required are benches placed between the rows of lockers. The toilet rooms and showers should be placed within easy direct access of the locker rooms. Here again the rule should be to make the accommodations as ample as the budget will permit. To keep down cost only the simplest plans and most



Manchester Country Club at South  
Manchester, Conn. Frank C. Farley  
Architect. Wm. Harmon Beers, Associated



Rear Elevation Overlooking River

Manchester Country Club at South Manchester, Conn. Frank C. Farley, Architect, Wm. Harmon Beers, Associated

inexpensive equipment can be considered, and as such clubs will necessarily be "self-serviced," it is probable that hot water supply in the fixtures will be dispensed with, but an instantaneous heater or other means will be provided to supply hot water as needed for showers or in the kitchen.

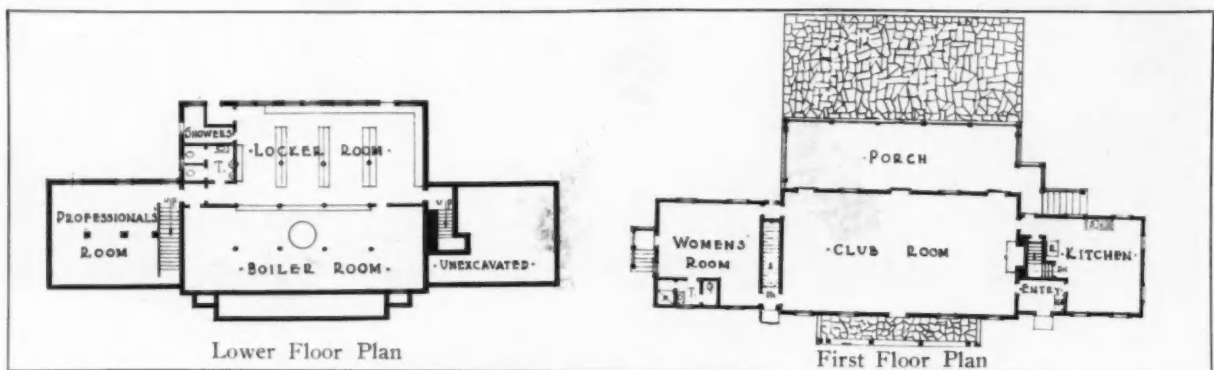
If the men's locker room can be located in a basement, always provided that the basement is entirely above ground level on at least one side or better on two or three, so that adequate light and above all ventilation can be assured by many windows, then much saving in the general bulk of the entire building can be made. The women's locker room, on the other hand, will find its best location on the main floor and in substantially direct connection with the main club room. If funds are available, the portion of the building devoted to lockers may well be separated from a general retiring room.

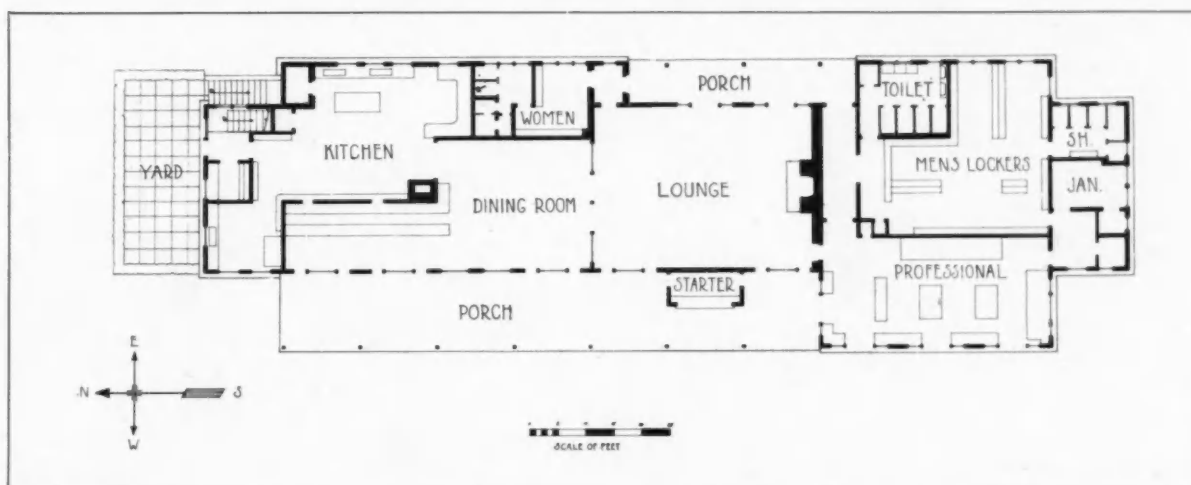
The kitchen should be a spacious room located in direct connection with the club room and porch so that whether a caterer be employed to serve the dinner or afternoon collation or whether this be undertaken by a committee of members, or

whether individuals bring their own refreshments and merely desire to make tea or coffee, the kitchen will be conveniently at hand. As a rule, in such an establishment as we are considering, some kind of portable range burning wood will be found acceptable, since it is equal to cooking a large dinner if required, as well as snacks. As electric power is almost always available, arrangements may well be made for a small electric unit for cooking.

We may now consider the club room and porch, around which all the other parts of the club house may be said to be grouped. Large, free, open space is most to be desired in these units, and if they can be thrown together for large gatherings, they will be doubly useful. A certain domestic atmosphere, however, must be kept, and the opportunity of arranging furniture for groups of friends should not be overlooked.

As much of the charm of the country club, however unpretentious its building may be, lies in its setting, it is necessary to provide in its budget for adequate planting, for no other one element will contribute so greatly to its success.

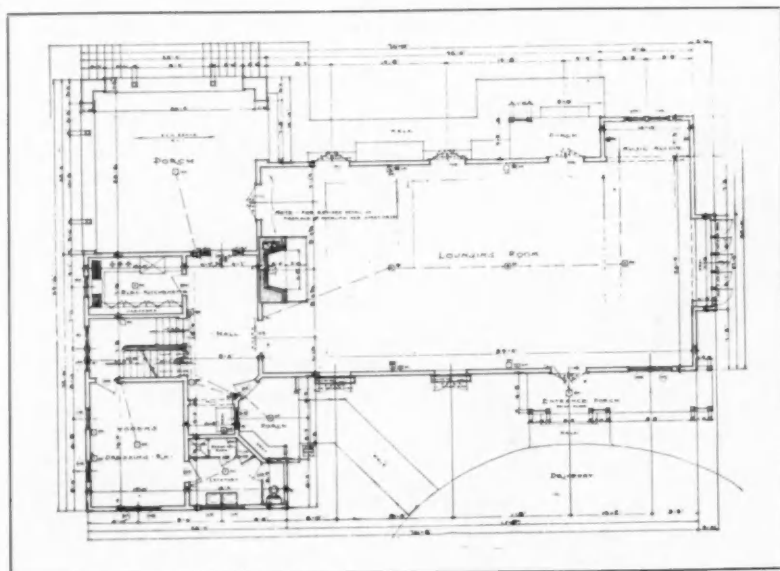




MUNICIPAL GOLF CLUB AT  
PASADENA. MYRON HUNT &  
H. C. CHAMBERS, ARCHITECTS



*Photos. Tebbs & Knell, Inc.*



FIRST FLOOR PLAN

TWO VIEWS OF THE  
COUNTRY CLUB AT  
KINGSPORT, TENN.  
CLINTON MACKENZIE,  
ARCHITECT





*Photos. Miller*



EXTERIOR AND LOUNGE  
INGLEWOOD COUNTRY  
CLUB AT SEATTLE  
SCHACK, YOUNG AND  
MYERS, ARCHITECTS

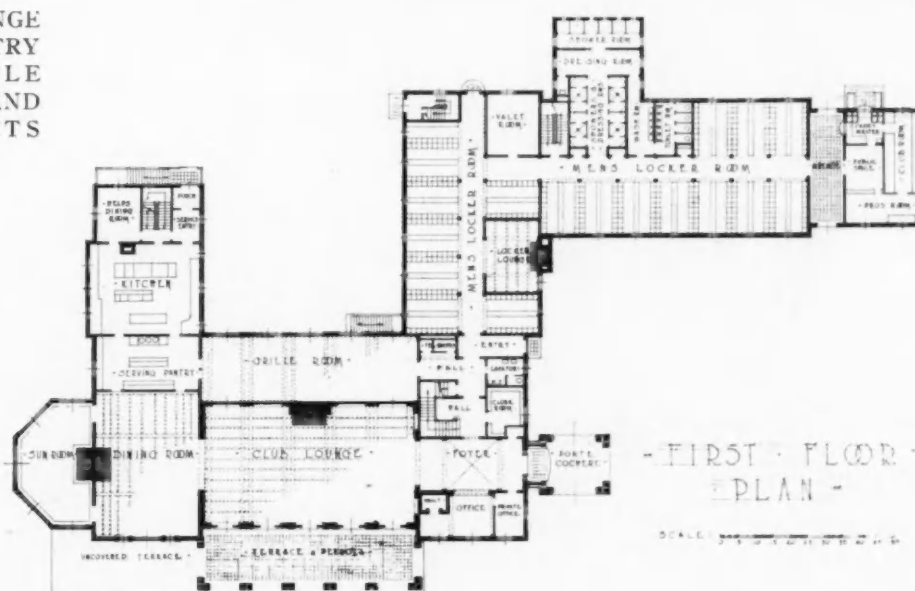
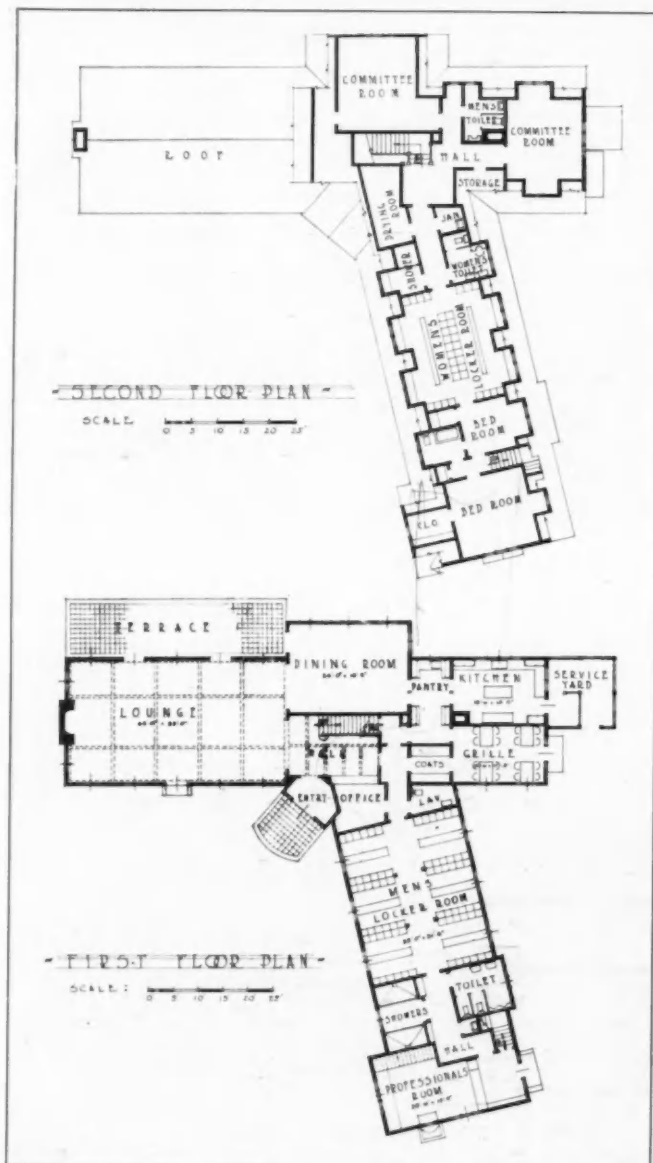




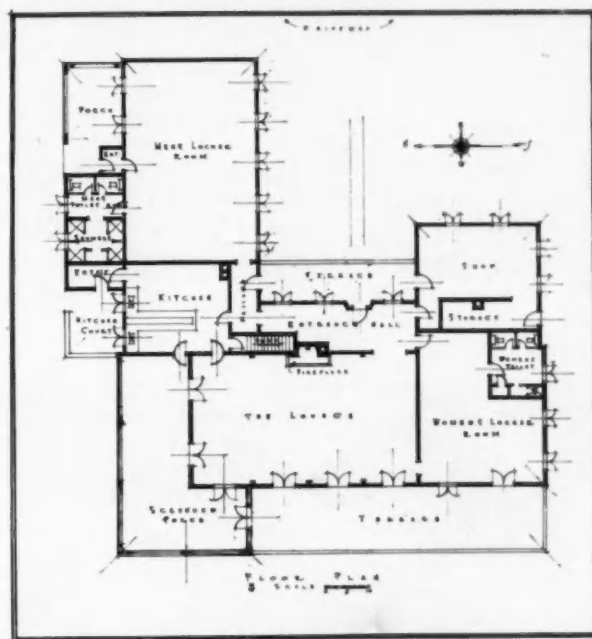
Photo. DePue, Morgan & Co.



GLENDAL GOLF AND COUNTRY CLUB AT SEATTLE. SCHACK, YOUNG & MYERS, ARCHITECTS



OTTAWA COUNTRY CLUB, OTTAWA, ILL. JOHN HANIFEN, ARCHITECT



ABOVE, REAR ELEVATION. BELOW, EAST ELEVATION AND DRIVEWAY



*Photos, Gottscho*

NORTHEAST ELEVATION



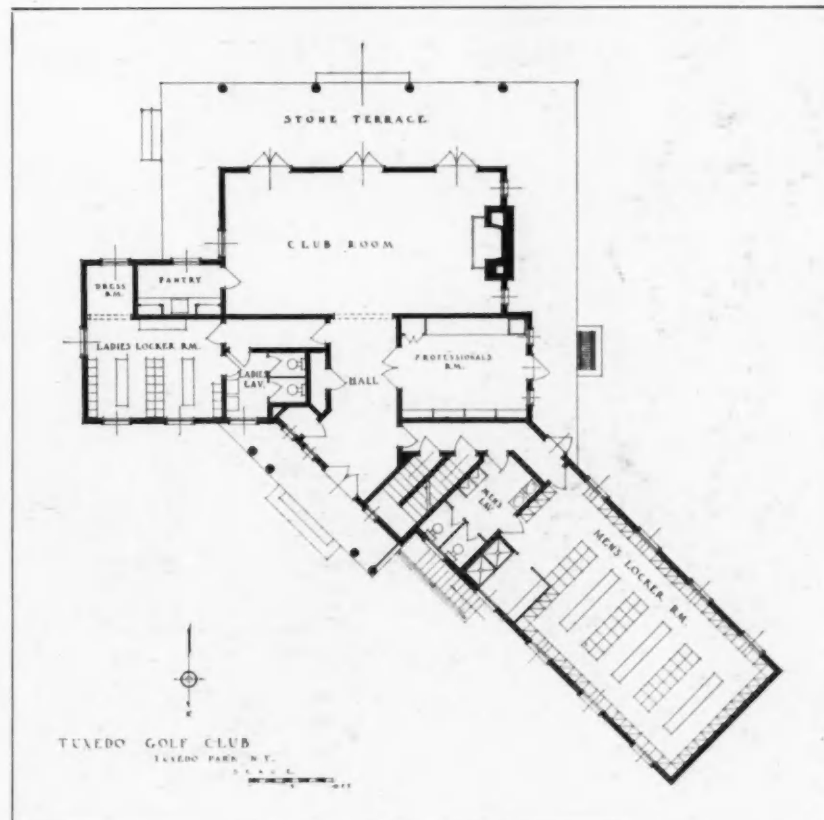
LOCKER ROOM PORCH

TUXEDO GOLF CLUB  
AT TUXEDO PARK,  
N. Y. KENNETH M.  
MURCHISON, ARCH.





COVERED PORCH

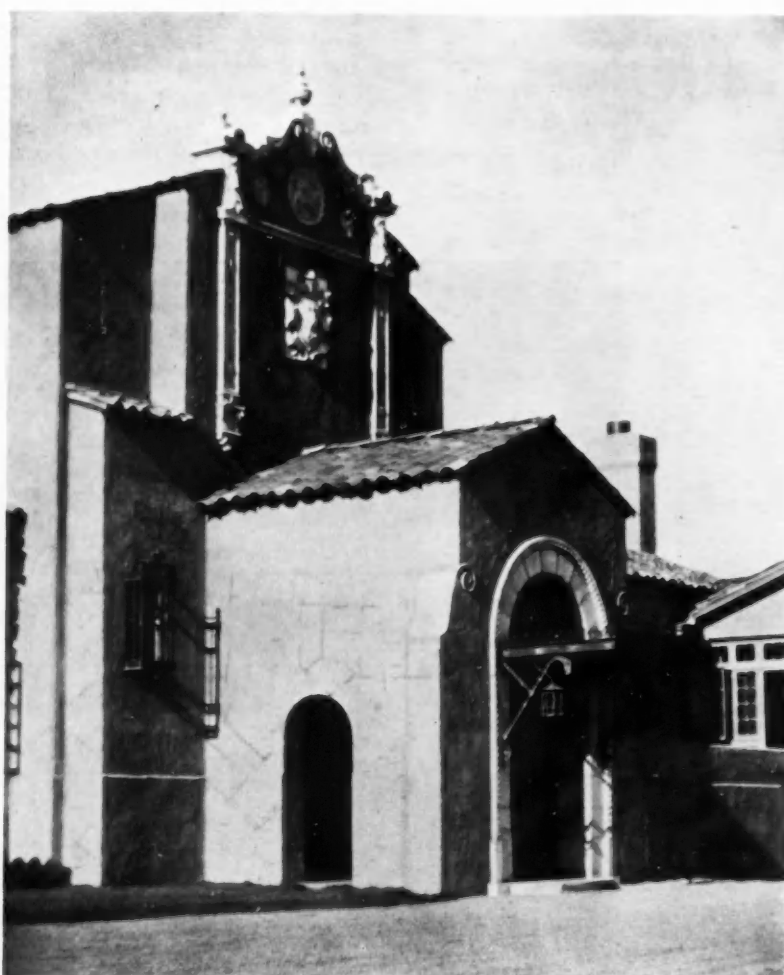


FIRST FLOOR PLAN

TUXEDO GOLF CLUB  
AT TUXEDO PARK,  
N. Y. KENNETH M.  
MURCHISON, ARCH.



*Photos. Laura Gilpin*



THE POLO CLUB, DENVER  
W. E. & A. A. FISHER, ARCHS.

# INTERIOR ARCHITECTURE AND FURNISHING OF THE COUNTRY CLUB

BY  
DWIGHT JAMES BAUM

INTERIOR architecture includes all that part of the inside of a building that is conceived, designed and executed under the direction of the architect. By furnishing is meant the movable fittings necessary to complete and make the structure ready for occupancy, such as furniture, rugs, hangings and minor accessories. In either case the architect, who probably has been carefully selected, should not only completely design the interior, but also should select or help select, in association with the decorator, all the furnishings. Unless the architect has control over this important part of the work, his conception of the design or character of the building is likely to be, and usually is, lost. In this day when theaters and hotels are decorated in a lavish manner, most club committees feel that their buildings should be equally if not more attractive, to satisfy or appeal to their members. This does not mean that a great amount of money must be spent, but it does mean that the rooms must be furnished and decorated in a manner that uses to the best advantage the amount of money available. Also the character decided upon must be consistent with the style of the building itself. Often one approaches a structure of definite type and enters expecting to see the interior designed in the same style. Quite often, however, one is disappointed by the different handling of the problem. Prob-

ably the chairman of the committee appointed a sub-committee, with the result that the interior architecture does not tie in at all with that of the exterior.

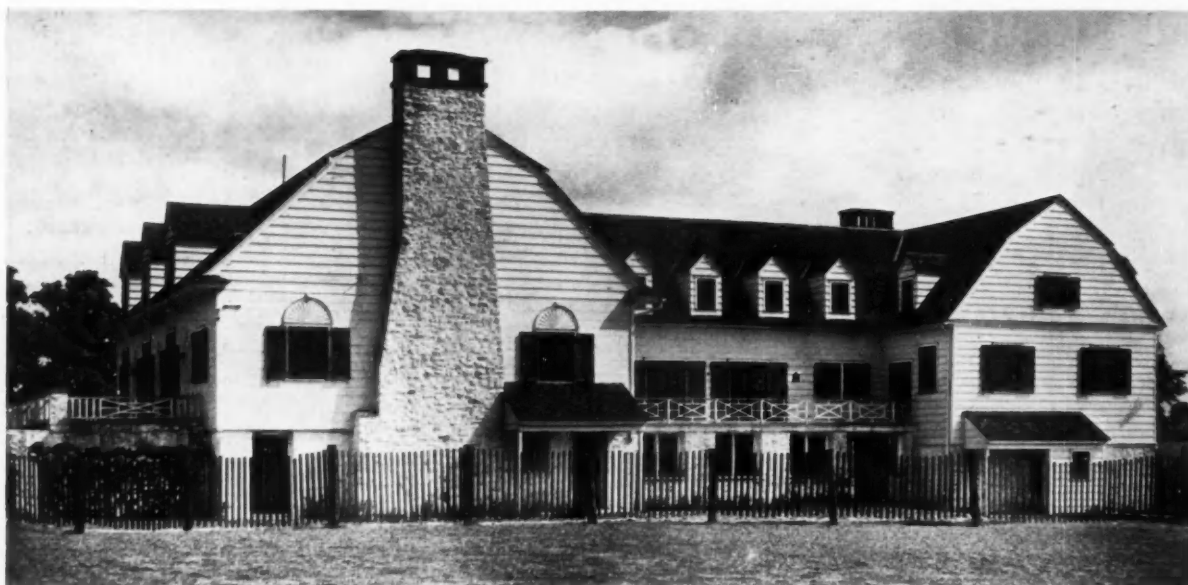
Let us consider materials first. For an informal building in the Italian, French, English, early Colonial or Spanish style, textured walls of plaster, hewn or adzed timbers for beams and ceilings, tile, slate, stone flagging or planks of oak or pine are appropriate. For more formal interiors, such as English Georgian, our own Colonial version, Italian Renaissance or French of the great periods, walls of smooth plaster or paneled with wood either painted or stained are consistent. Ceilings of ornamental plaster or paneled wood, with floors of teak or oak plank, parquet as herringbone, tile or marble should be used.

Considering the plan and design in general, simple treatment of the entrance hall or vestibule serves to accentuate the decorations of the main stair hall or the "great hall," which is often the most important social room. Club offices, cloak rooms and minor rooms such as telephone rooms, powder rooms, lavatories, etc., should be convenient to the entrance so that guests and members need not go through the principal rooms during entertainments to remove their wraps. The stair hall presents great opportunities to the designer



*Photos. Gottscho*

DRUMLIN'S COUNTRY CLUB, SYRACUSE  
DWIGHT JAMES BAUM, ARCHITECT

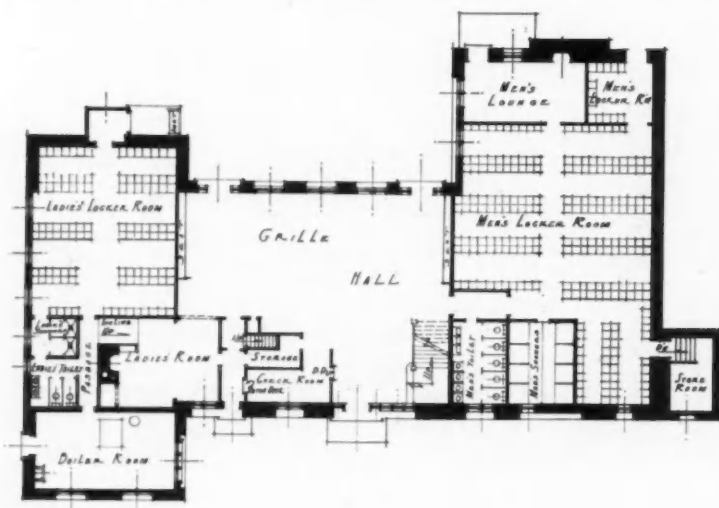


EAST FACADE  
DRUMLIN'S COUNTRY CLUB, SYRACUSE  
DWIGHT JAMES BAUM, ARCHITECT

for securing an important decorative feature. Some form of curved stairway usually gives the most attractive appearance, if cost and available space permit. A square stairway can be made attractive if it is possible to obtain a stair well of sufficient size to give an effect of stateliness. The rise of the steps should be lower and the treads wider than in the usual country house. There should be landings at proper intervals if the story height is great, and the design and scale of the balusters and rail should be carefully studied. Materials of course should be appropriate to the style chosen, but durability and wear should be considered, since a club house receives hard usage and sometimes not the best of care. Constant repairs and painting are required. In early Italian and Spanish interiors the stairs were usually carried up between partly enclosed walls with vaulted ceilings. This treatment is still ap-

propriate. Later Italian houses, as in Florence and Genoa, had most imposing and monumental stairways. Club houses without important rooms on the second story can of course have less elaborate stairways. Stairs may even be placed in a side hall, such as a hall leading to the locker room.

Another important decorative feature is the fireplace which is usually the center of interest in the great hall, lounge or dining room. In no other architectural detail can the style characteristic of the interior be expressed as easily. This feature should dominate the room, or at least be the most important object on the wall it occupies. If the room is English or American Georgian or Colonial, the mantel is usually of wood stained or painted, with facings of marble, brick, or sometimes of soapstone or cement. Some of the richer mantels are of marble as designed by the brothers Adam in England. In early English rooms,



GROUND FLOOR PLAN





NORTH FACADE  
 DRUMLIN'S COUNTRY CLUB, SYRACUSE  
 DWIGHT JAMES BAUM, ARCHITECT

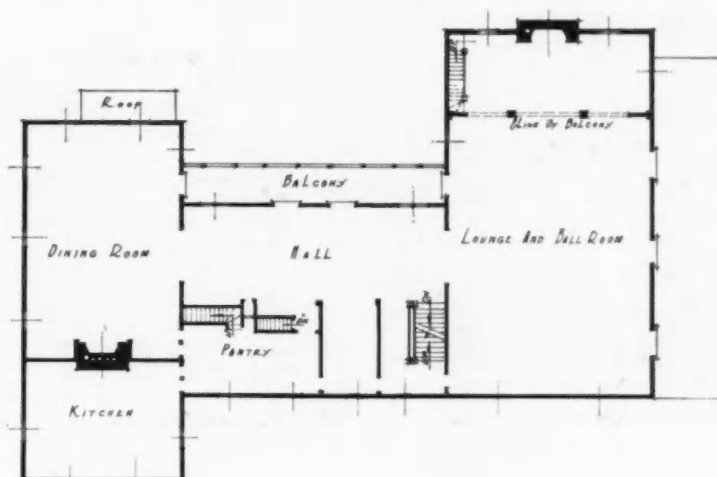
mantels of oak with linen fold carved panels and pilasters of Tudor, Elizabethan or Jacobean motifs give a distinctive style. All of these mantels should have fire openings wider than they are high. Many Spanish mantels are of similar proportions, but usually higher in relation to the width. Always in the Italian style the fire opening is larger, especially in height. Sometimes the size is great enough for a man to stand upright within the opening. Such mantels are appropriate for large club rooms. The material is usually of stone, though sometimes of marble. In all mantels the hearths should be of the same material as the facings. French mantels are usually of wood with marble facings, or else entirely of marble. In either case, the linings are of ornamental iron forming a decorative fireback. Early French types, like the popular Norman, have mantels somewhat similar to the early Eng-

lish with stone jambs, occasionally with wooden lintels, and they always have large openings.

The dignity and impressiveness of the two or three most important rooms, such as the great hall, the lounge and the dining room, are greatly increased if they can be at least a story and a half high. Height gives a spacious appearance which is needed in any room planned for entertaining. In designing these rooms, proportion is as important as size, and the selection of materials must be made with care. The selection of wood, texture of walls, ceiling surfaces, use of flooring materials, and finally color all determine the success of the interior.

By wall texture is not meant exaggerated splashed plaster walls showing plainly a striving for an artificial antique effect, but instead a well hand finished room, with a pleasing surface simply done. Flooring can easily express the style

MAIN FLOOR PLAN



of the room. Pine planks indicate early Colonial, oak is English, teak is Georgian or Elizabethan, or late Italian, parquet is French, tile is Italian or Spanish, etc. Color is without doubt one of the most important details of an interior. A well studied color scheme can make an otherwise ordinary interior attractive. Recent successful rooms are done in carefully chosen colors such as gray-green, greenish blue, deep tan and dark gray. The walls, paneling and trim are today preferably painted the same shade and color, giving a much simpler treatment and a more successful room. Where wallpapers are used, as in Colonial interiors, the trim, wainscoting, etc., should be painted a color to match the background or some part of the design in the paper. The furnishings, whether rugs, hangings, furniture or accessories, must complement the interior architecture. Each part is of necessity dependent on the success of the others. If the architect who designed the building has produced a successful interior, he is certainly capable of either selecting or advising on the furnishings. He will not have the facilities or time for carrying out all of the many details, perhaps, so a competent decorator should be associated. Only by this method can the best results be had.

By a decorator is not meant a woman member of the committee who has helped furnish the house of some friends besides her own, or another kind of decorator who is merely a purchasing agent. A real decorator will be able to work in the spirit of the architect's design and help to

produce results that will for years be appropriate and attractive. Besides being appropriate, the furnishings must be comfortable, livable, made well and look well. The scale of the pieces must necessarily be larger in the main rooms than in a residence, and yet in the more intimate and smaller rooms there is very little difference. Certain features should of course be made the most important, as in the design of the room. No scheme involving much use of identical pieces is successful, and much similarity in materials, color, etc., makes for ordinary results. If a figured rug or carpet is used, the upholstery fabrics should be of plain colors. If the floor covering is plain, then definitely figured fabrics can be used. If plain walls either of paint or wood paneling are used, figured hangings will be appropriate; otherwise plain curtains should be used.

I have purposely avoided, up to this point, referring to the so-called "modern" architecture. So far the endeavor to create a new style has produced some interesting results, such as the use of plain surfaces and new or unusual combinations in color. I remember that an eminent critic recently said that all the ornament evolved so far is grooved lines, up and down or sideways, zigzags, or streaks of lightning. I do not doubt that something will come out of the present movement, but unless a club is ready to redecorate and refurnish within a few years, I believe that the use of conservative, basically sound styles of the past should be continued and adapted to modern club requirements.



*Photo. Smith, Lindsley & Arnold*

LOUNGE AND BALL ROOM  
DRUMLIN'S COUNTRY CLUB, SYRACUSE  
DWIGHT JAMES BAUM, ARCHITECT



*Photos. Wallace*

MAIN STAIR HALL



PRIVATE DINING ROOM  
HUNTINGDON VALLEY COUNTRY  
CLUB, WILLOW GROVE, PA. TILDEN,  
REGISTER & PEPPER, ARCHITECTS



*Photos. Tebbs & Knell, Inc.*

ABOVE, THE MAIN DINING  
ROOM. BELOW, A CORNER  
OF THE MEN'S LOUNGE



CHEROKEE COUNTRY CLUB, KNOXVILLE  
BAUMANN & BAUMANN, ARCHITECTS





*Photos. Gottscho*

ABOVE, DINING ROOM SHOWING  
DOORS LEADING TO DINING  
PORCH. BELOW, MEN'S LOUNGE



TUXEDO COUNTRY CLUB, TUXEDO PARK, N. Y.  
OFFICE OF JOHN RUSSELL POPE, ARCHITECT



*Tebbs & Knell, Inc.*

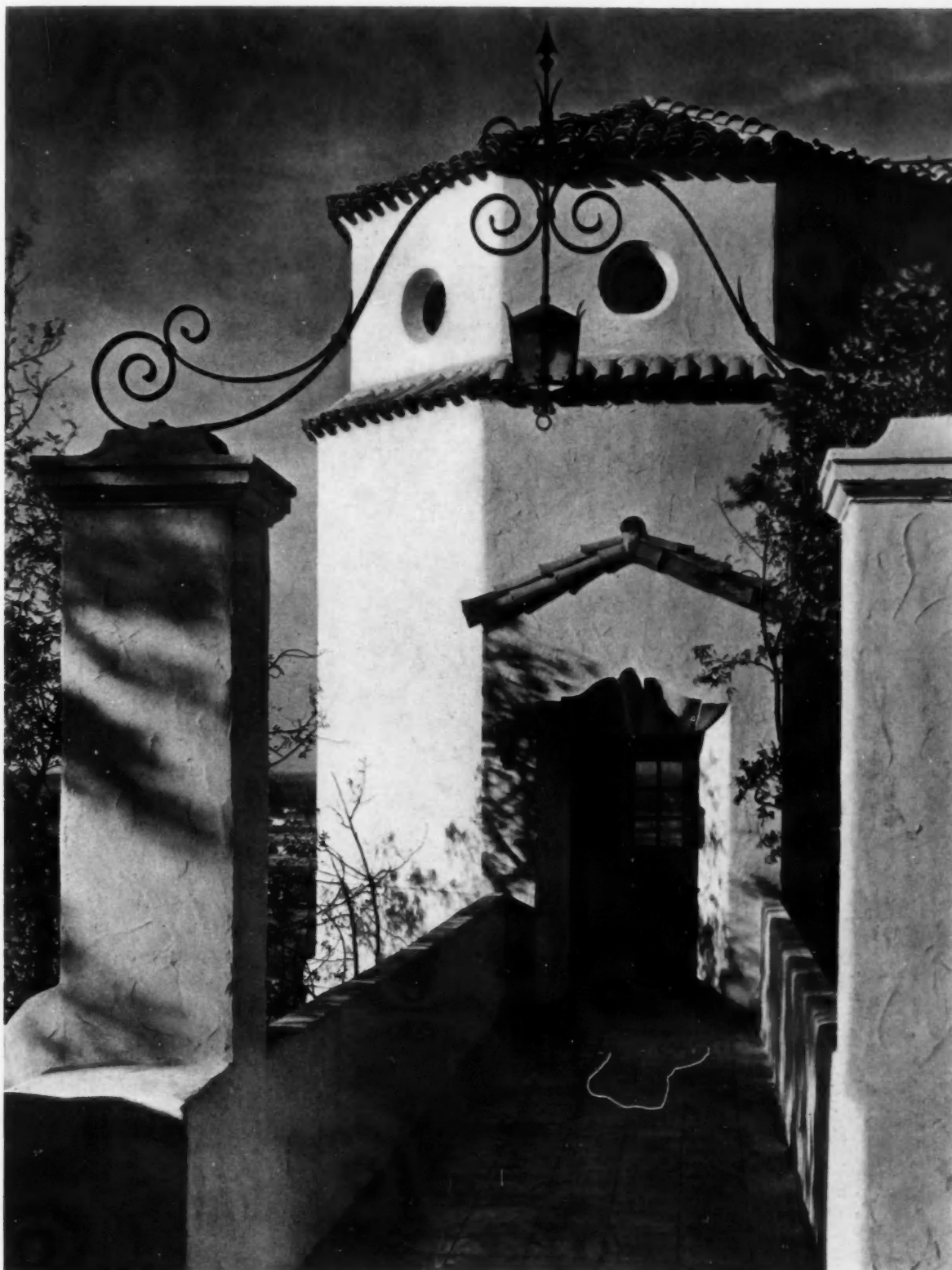
PRIVATE DINING ROOM  
CAPITAL CITY COUNTRY CLUB, ATLANTA  
BURGE AND STEVENS, ARCHITECTS



*Richard Averill Smith*

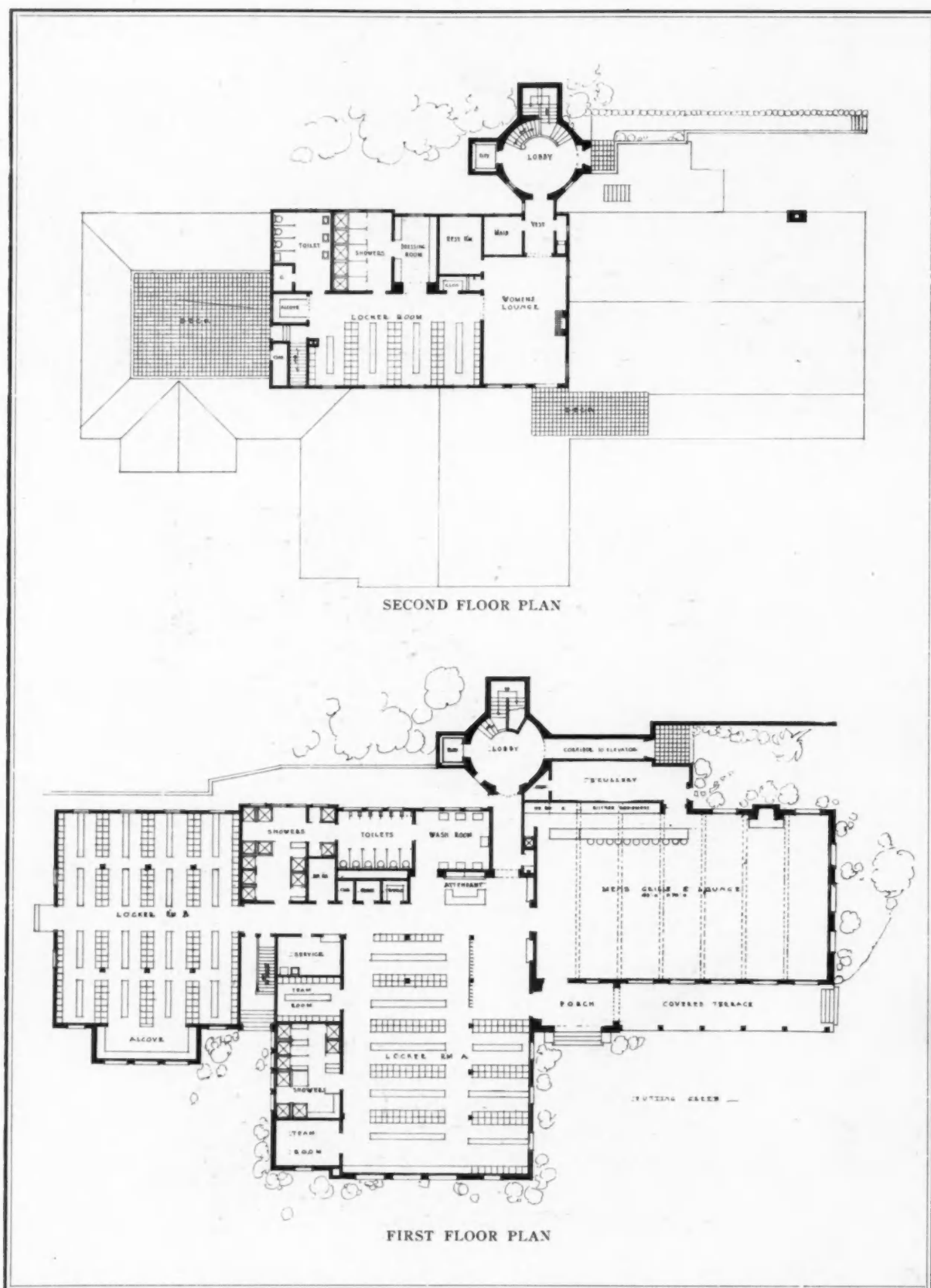
LOUNGE  
RIVERSIDE YACHT CLUB AT RIVERSIDE,  
CONN. BREED, FULLER & DICK, ARCHITECTS

# EIGHT GOLF AND COUNTRY CLUBS



*Photos. Mott Studios*

LOCKER BUILDING, HOLLYWOOD COUNTRY CLUB  
HOLLYWOOD, CAL. ROTH & PARKER, ARCHITECTS



LOCKER BUILDING, HOLLYWOOD COUNTRY CLUB  
HOLLYWOOD, CAL. ROTH & PARKER, ARCHITECTS





GENERAL VIEW



SPIRAL STAIRCASE IN TOWER

LOCKER BUILDING, HOLLYWOOD COUNTRY CLUB,  
HOLLYWOOD, CAL. ROTH & PARKER, ARCHITECTS



#### COST AND CONSTRUCTION DATA

YEAR OF COMPLETION: 1929.

TYPE OF CONSTRUCTION: Frame and stucco.

EXTERIOR MATERIALS: Plaster.

INTERIOR MATERIALS: Plaster and wood.

ROOF CONSTRUCTION: Open trusses.

WINDOWS: Wood.

FLOORS: Linoleum.

HEATING: Steam.

VENTILATION: Plenum.

NUMBER OF MEMBERS: 750.

NUMBER OF SQUARE FEET: 20,000.

COST PER SQUARE FOOT: \$4.

TOTAL COST: \$80,000.

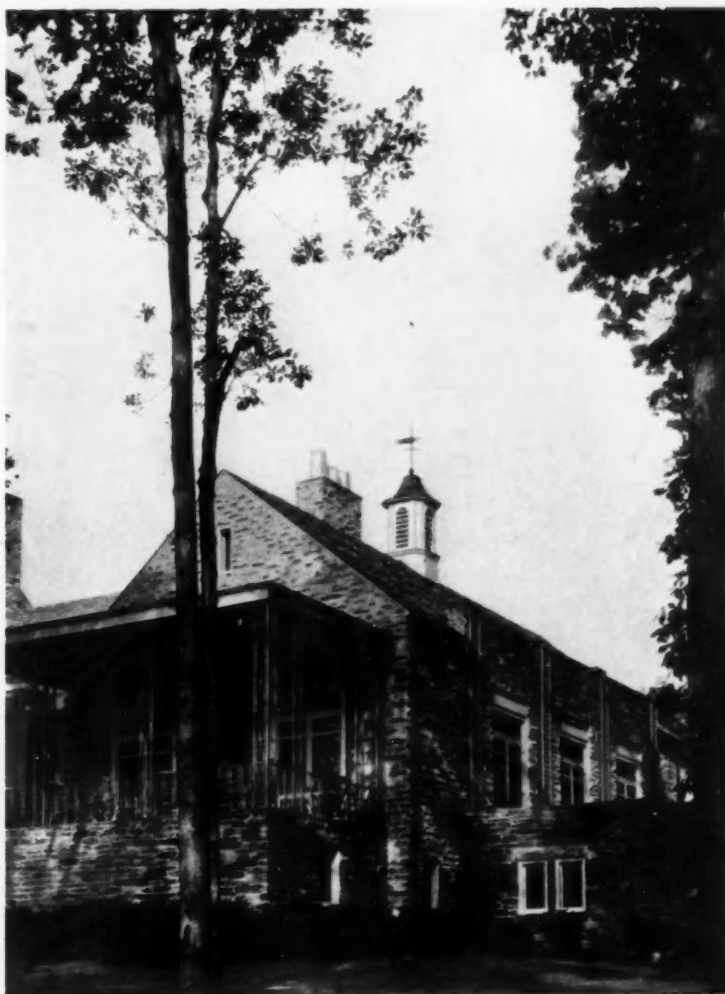
LOCKER BUILDING, HOLLYWOOD  
COUNTRY CLUB, HOLLYWOOD, CAL.  
ROTH & PARKER, ARCHITECTS



*Photos. Wallace*

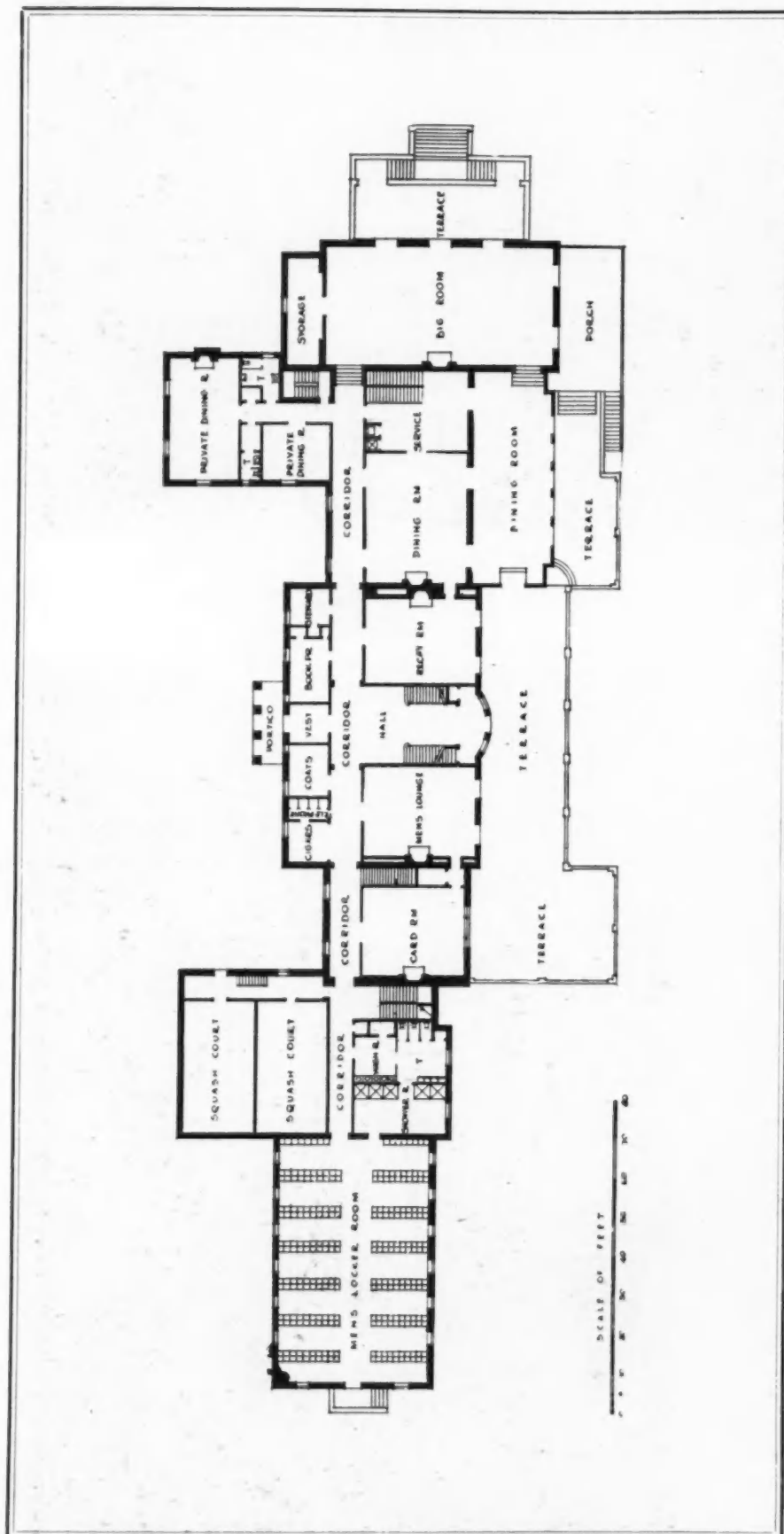
ENTRANCE GATEWAY  
AND THE FORECOURT.

THE LIVING ROOM  
WING AND PORCH



HUNTINGDON VALLEY  
COUNTRY CLUB AT  
WILLOW GROVE, PA.  
TILDEN, REGISTER &  
PEPPER, ARCHITECTS

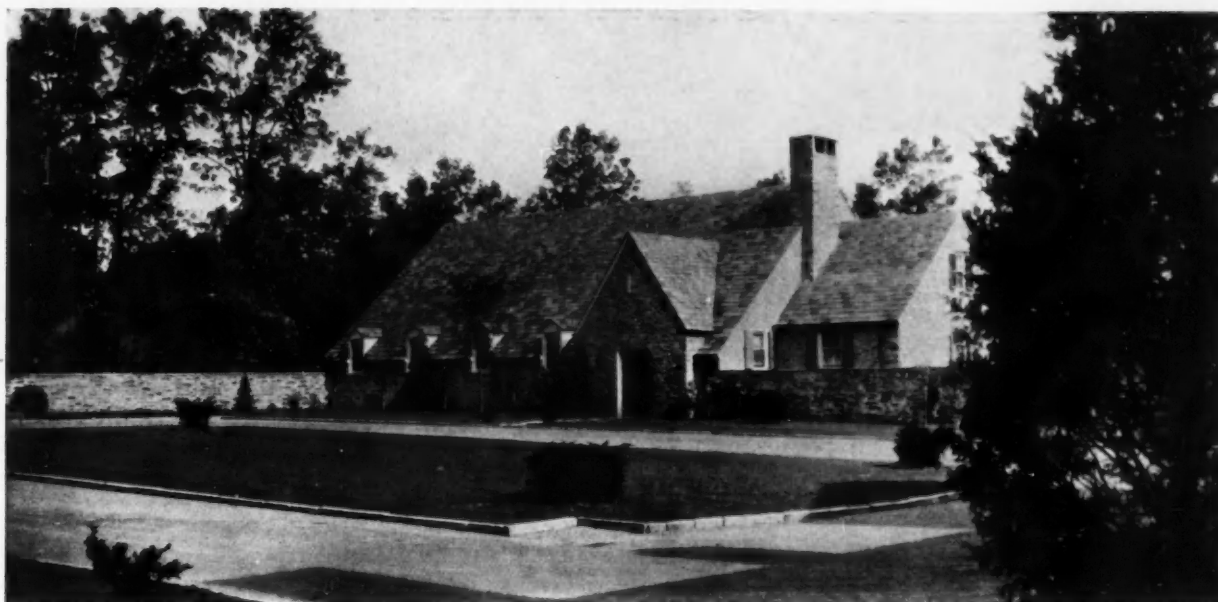




FIRST FLOOR PLAN

HUNTINGDON VALLEY  
COUNTRY CLUB AT  
WILLOW GROVE, PA.  
TILDEN, REGISTER &  
PEPPER, ARCHITECTS



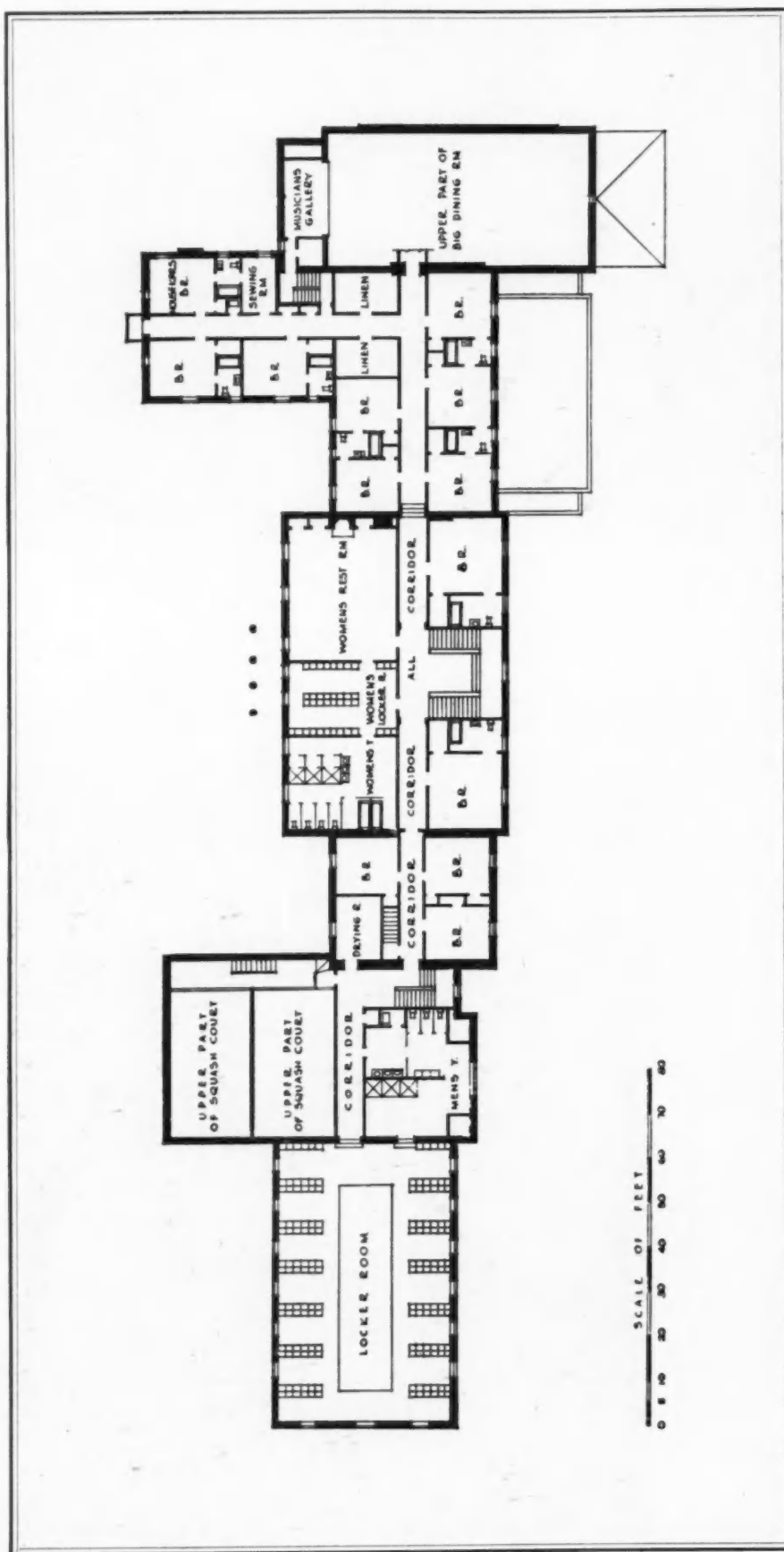


THE GARAGE AND  
SERVANTS' QUARTERS

ENTRANCE TO THE  
SOUTH TERRACE



HUNTINGDON VALLEY  
COUNTRY CLUB AT  
WILLOW GROVE, PA.  
TILDEN, REGISTER &  
PEPPER, ARCHITECTS



SECOND FLOOR PLAN

HUNTINGDON VALLEY  
COUNTRY CLUB AT  
WILLOW GROVE, PA.  
TILDEN, REGISTER &  
PEPPER, ARCHITECTS



THE DINING ROOM

CHIMNEYPiece AND  
SIDE TROPHY CASES  
IN THE MEN'S LOUNGE



HUNTINGDON VALLEY  
COUNTRY CLUB AT  
WILLOW GROVE, PA.  
TILDEN, REGISTER &  
PEPPER, ARCHITECTS

#### COST AND CONSTRUCTION DATA

YEAR OF COMPLETION: 1928.

TYPE OF CONSTRUCTION: Frame.

EXTERIOR MATERIALS: Stone walls, slate roof, wood trim.

INTERIOR MATERIALS: Plaster and wood.

ROOF CONSTRUCTION: Frame.

WINDOWS: Double-hung and French casements.

FLOORS: Oak on light steel.

HEATING: Vapor heating, two boilers.

VENTILATING: In kitchen, serving rooms and third floor servants' rooms.

NUMBER OF BEDROOMS: 13.

NUMBER OF MEMBERS: 600.

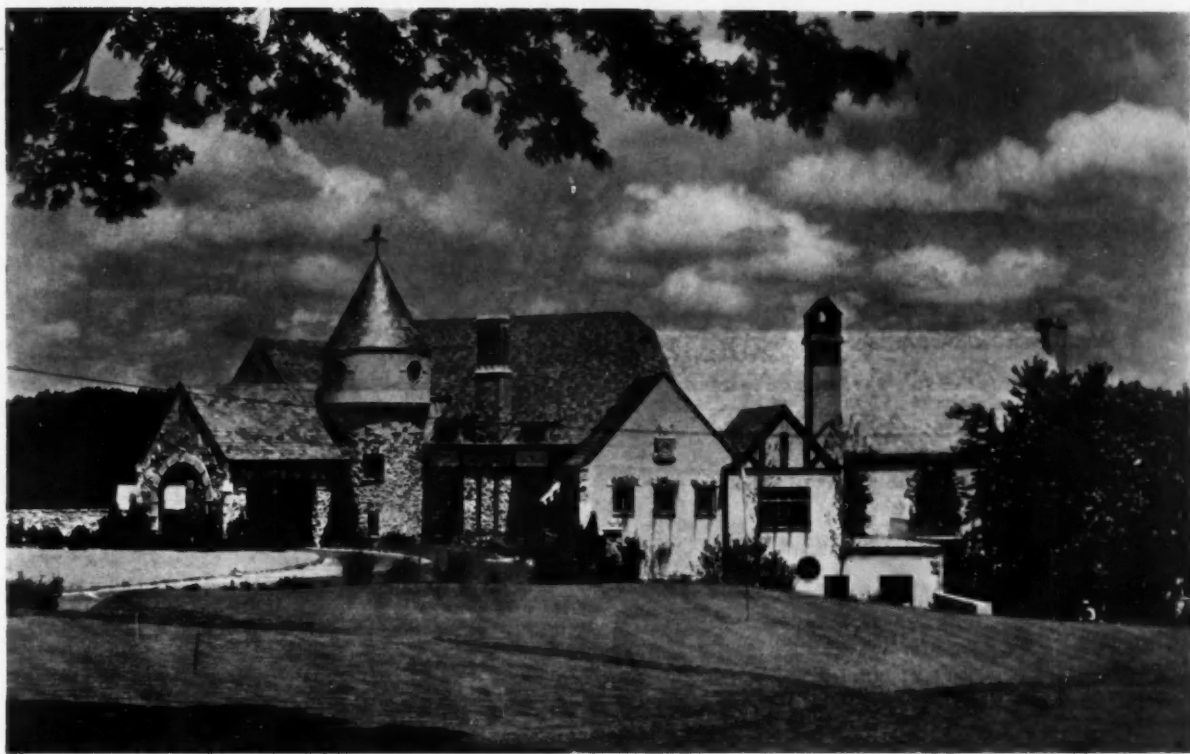
NUMBER OF CUBIC FEET: 841,155.

COST PER CUBIC FOOT: 46 cents.

TOTAL COST: \$387,000.

HUNTINGDON VALLEY COUNTRY  
CLUB, WILLOW GROVE, PA. TILDEN,  
REGISTER & PEPPER, ARCHITECTS





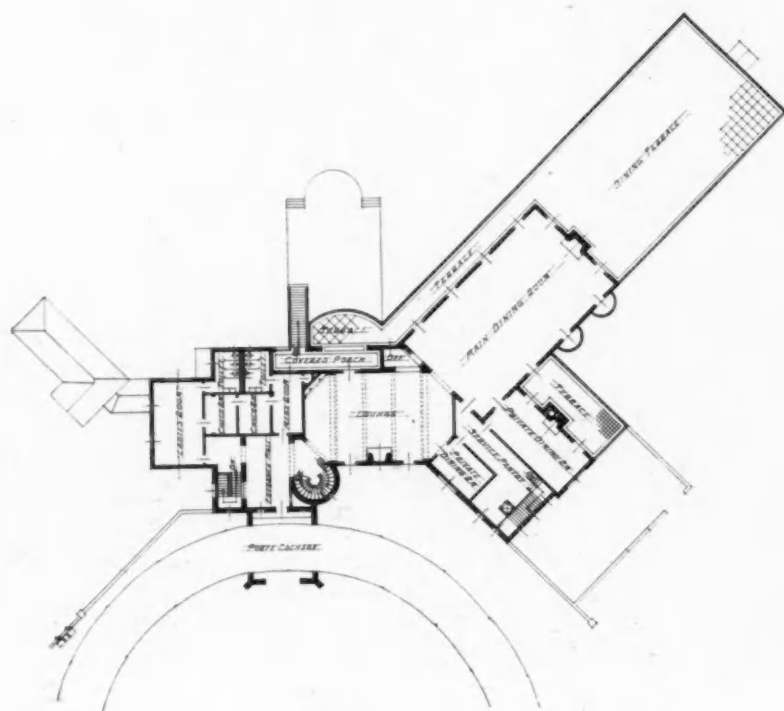
*Photos. Tebbs & Knell, Inc.*

FRONT ELEVATION

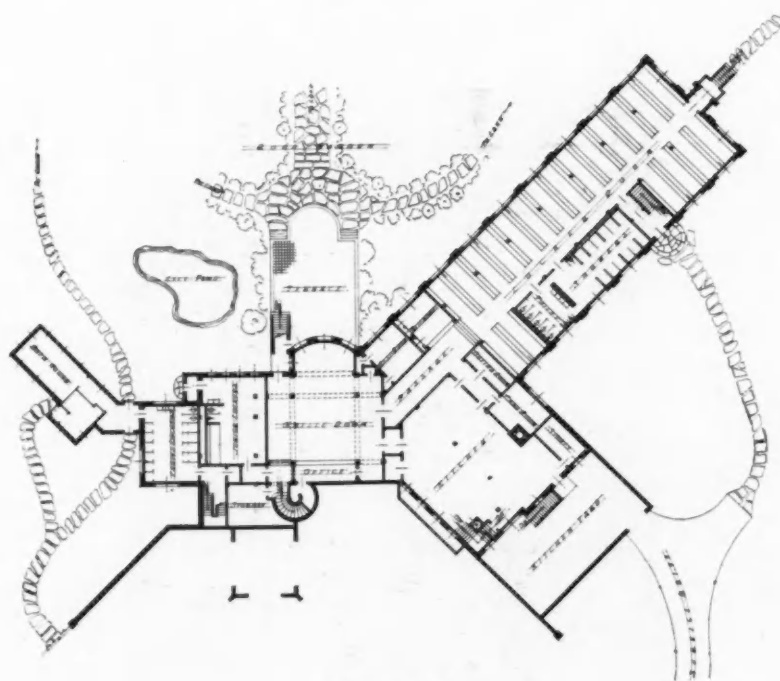


PORTE COCHÈRE

CAPITAL CITY COUNTRY CLUB, ATLANTA.  
BURGE AND STEVENS, ARCHITECTS



UPPER LEVEL



LOWER LEVEL

CAPITAL CITY COUNTRY CLUB, ATLANTA  
BURGE AND STEVENS, ARCHITECTS



REAR ELEVATION



ENTRANCE TO MEN'S LOCKER ROOM

CAPITAL CITY COUNTRY CLUB, ATLANTA  
BURGE AND STEVENS, ARCHITECTS

#### COST AND CONSTRUCTION DATA

YEAR OF COMPLETION: 1928.

TYPE OF CONSTRUCTION: Fire resistive, reinforced concrete and steel frame, tile partitions.

EXTERIOR MATERIALS: Stone and stucco.

INTERIOR MATERIALS: Birch trim; plastered, papered and wood paneled walls.

ROOF CONSTRUCTION: Slate on nailing concrete supported on steel trusses.

WINDOWS: Steel sash.

FLOORS: Slate, tile, stone, cement, maple and oak.

HEATING: Steam with stoker.

VENTILATING: In kitchen only.

KITCHEN EQUIPMENT: Electric power for all cooking.

NUMBER OF MEMBERS: 1,000.

NUMBER OF CUBIC FEET: 410,000.

COST PER CUBIC FOOT: 53 cents.

TOTAL COST: \$217,000.

CAPITAL CITY COUNTRY CLUB, ATLANTA.  
BURGE AND STEVENS, ARCHITECTS

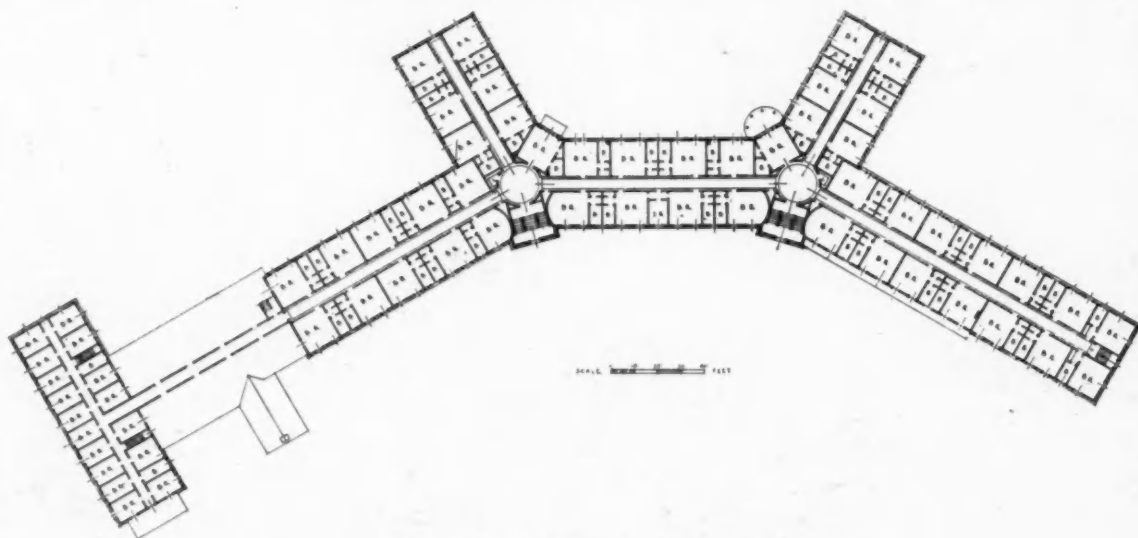




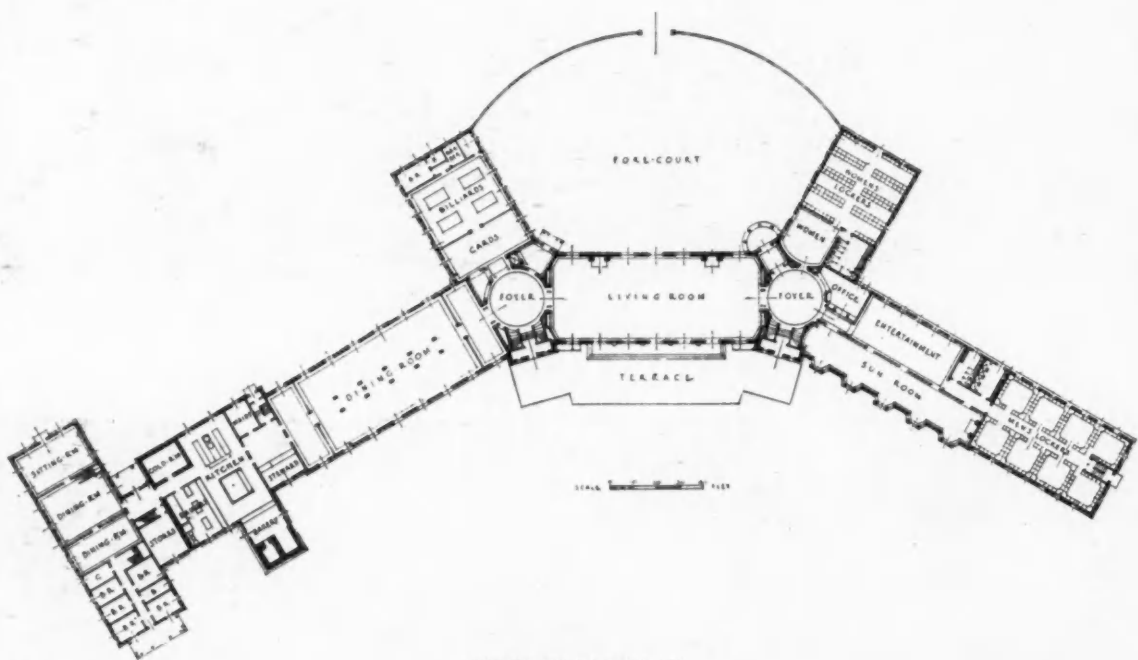
*Photos. Kenneth Clark*

MID-PINES COUNTRY CLUB  
MOORE COUNTY, N.C., Aymar  
Embury, II, Architect

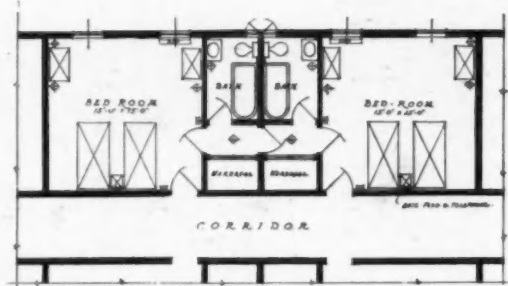
CORNER OF FORECOURT  
ENTRANCE PORTICO AT  
RIGHT OF LIVING ROOM



SECOND AND THIRD FLOOR PLAN

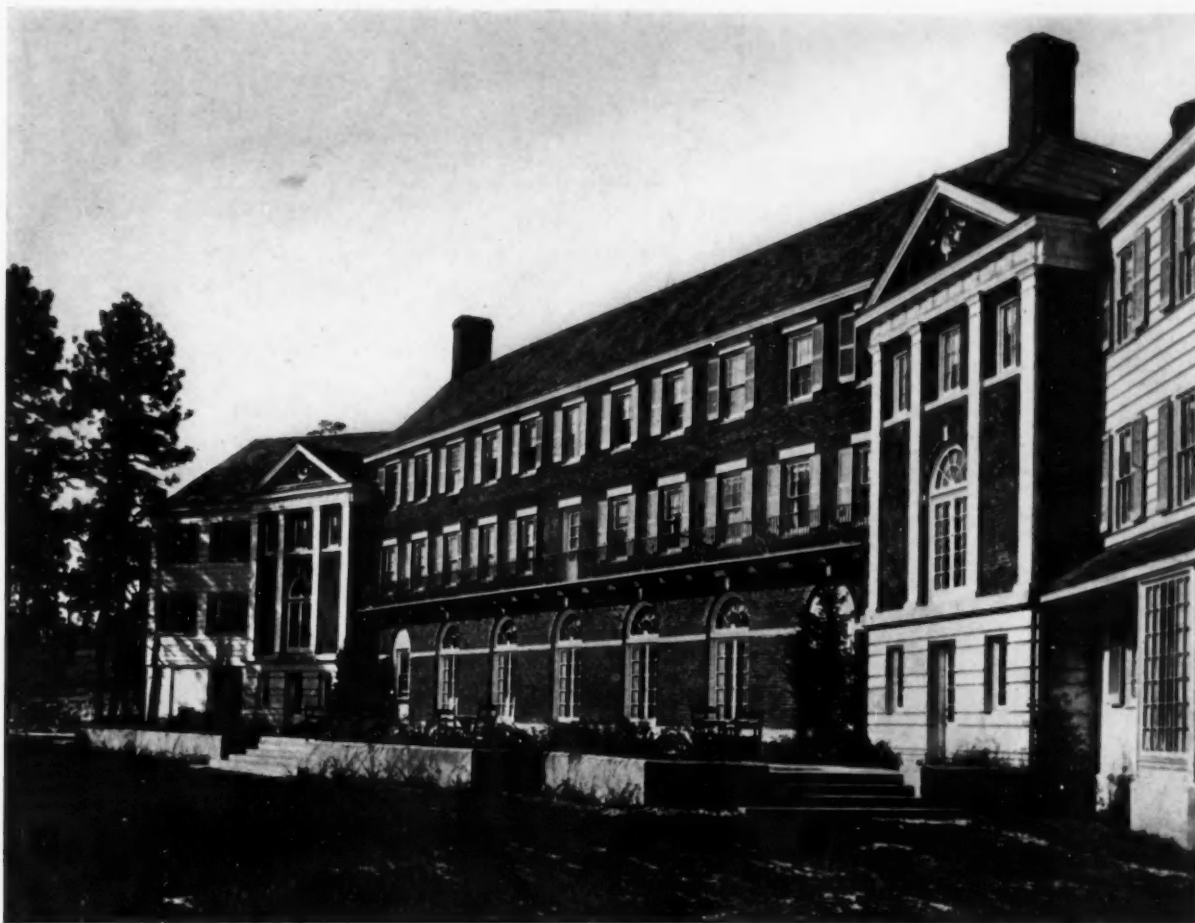


FIRST FLOOR PLAN



DETAIL OF BEDROOM PLAN

MID-PINES COUNTRY CLUB  
MOORE COUNTY, N. C. AYMAR  
EMBURY, II, ARCHITECT



CENTER OF SOUTH ELEVATION



MID-PINES COUNTRY CLUB  
MOORE COUNTY, N.-C. AYMAR  
EMBURY, II, ARCHITECT

VIEW OF GREAT LIVING ROOM

#### COST AND CONSTRUCTION DATA

YEAR OF COMPLETION : 1925.

TYPE OF CONSTRUCTION : Non-fireproof.

EXTERIOR MATERIALS : Brick.

INTERIOR MATERIALS : Plaster.

ROOF CONSTRUCTION : Frame and slate.

WINDOWS : Double-hung.

FLOORS : Oak.

HEATING : Steam.

NUMBER OF MEMBERS : 100.

NUMBER OF BEDROOMS : 100.

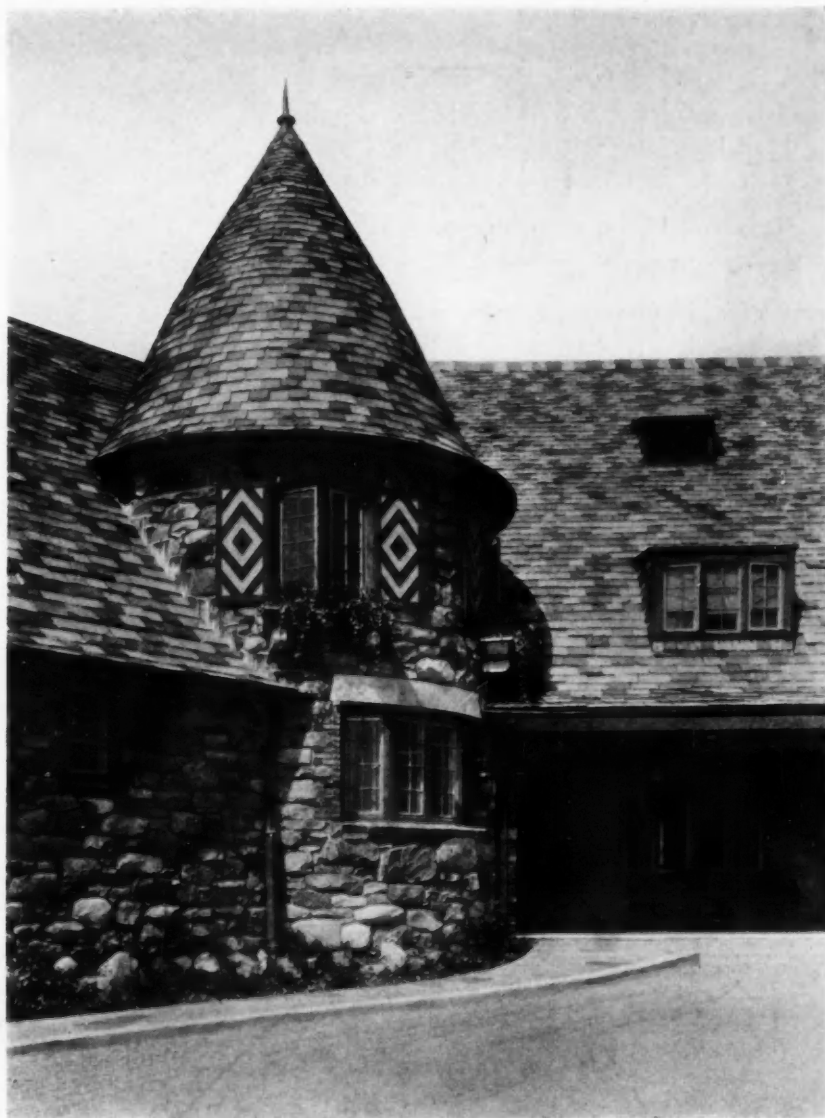
COST PER CUBIC FOOT : 43 cents.

MID-PINES COUNTRY CLUB, MOORE COUNTY, N. C.  
AYMAR EMBURY, II, ARCHITECT



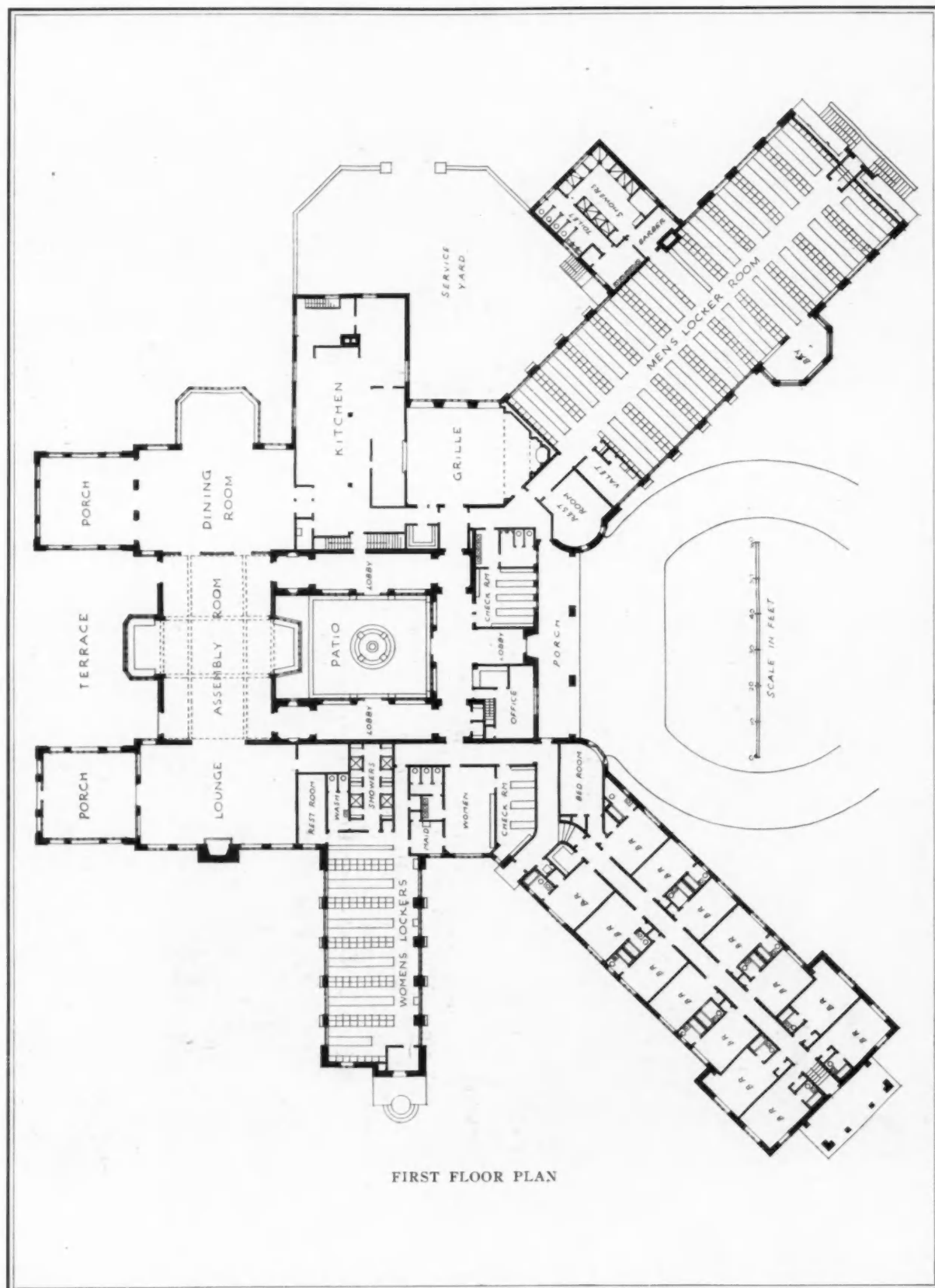


GENERAL VIEW



DETAIL OF THE ENTRANCE

THE FRANKLIN HILLS COUNTRY CLUB,  
FRANKLIN, MICH. ALBERT KAHN, INC., ARCHS.



THE FRANKLIN HILLS COUNTRY CLUB,  
FRANKLIN, MICH. ALBERT KAHN, INC., ARCHS.



REAR VIEW OF CLUB HOUSE



LIVING ROOM AND BEDROOM WINGS

THE FRANKLIN HILLS COUNTRY CLUB,  
FRANKLIN, MICH. ALBERT KAHN, INC., ARCHS.

#### COST AND CONSTRUCTION DATA

YEAR OF COMPLETION: 1928.

TYPE OF CONSTRUCTION: Fireproof.

EXTERIOR MATERIALS: Concrete block and brick.

INTERIOR MATERIALS: Cinder block, plaster, wood.

ROOF CONSTRUCTION: Plank on concrete slab.

WINDOWS: Steel casements.

FLOORS: Wood, tile and concrete.

HEATING: Steam.

NUMBER OF MEMBERS: 400.

NUMBER OF BEDROOMS: 15.

NUMBER OF CUBIC FEET: 864,000.

COST PER CUBIC FOOT: 42 cents.

TOTAL COST: \$365,300.

THE FRANKLIN HILLS COUNTRY CLUB,  
FRANKLIN, MICH. ALBERT KAHN, INC., ARCHS.





*Photos. Tebbbs & Knell, Inc.*

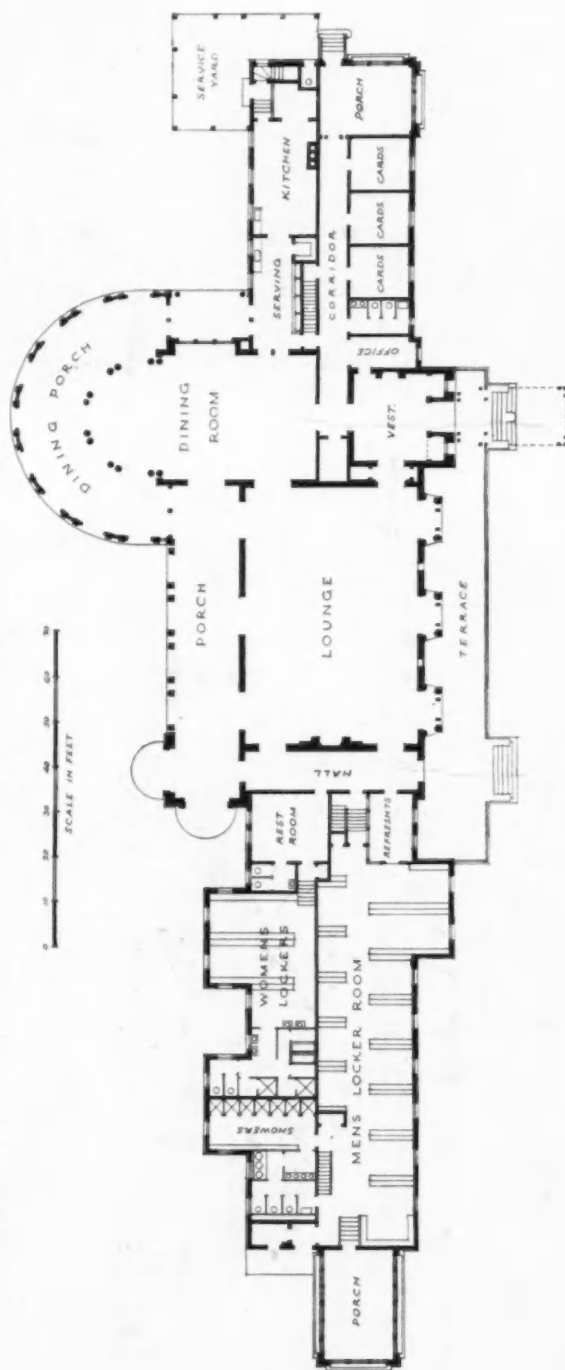
GENERAL VIEW



LOUNGE

THE WEST END COUNTRY  
CLUB AT NEW ORLEANS

MOISE H. GOLDSTEIN &  
EMILE WEIL, ARCHITECTS



FIRST FLOOR PLAN

### COST AND CONSTRUCTION DATA

TYPE OF CONSTRUCTION: Hollow tile, stucco, reinforced concrete, wood, steel, pile foundation.

EXTERIOR MATERIALS: Stucco, wood, cast stone.

INTERIOR MATERIALS: Ornamental plaster, wood, ornamental iron.

ROOF CONSTRUCTION: Steel trusses and wood.

WINDOWS: Wood casements.

FLOORS: Tile, hardwood, cement.

HEATING: Steam.

NUMBER OF MEMBERS: 525.

NUMBER OF CUBIC FEET: 302,000.

COST PER CUBIC FOOT: 50 cents.

TOTAL COST: \$150,198.

THE WEST END COUNTRY CLUB AT NEW ORLEANS.  
MOISE H. GOLDSTEIN & EMILE WEIL, ARCHITECTS

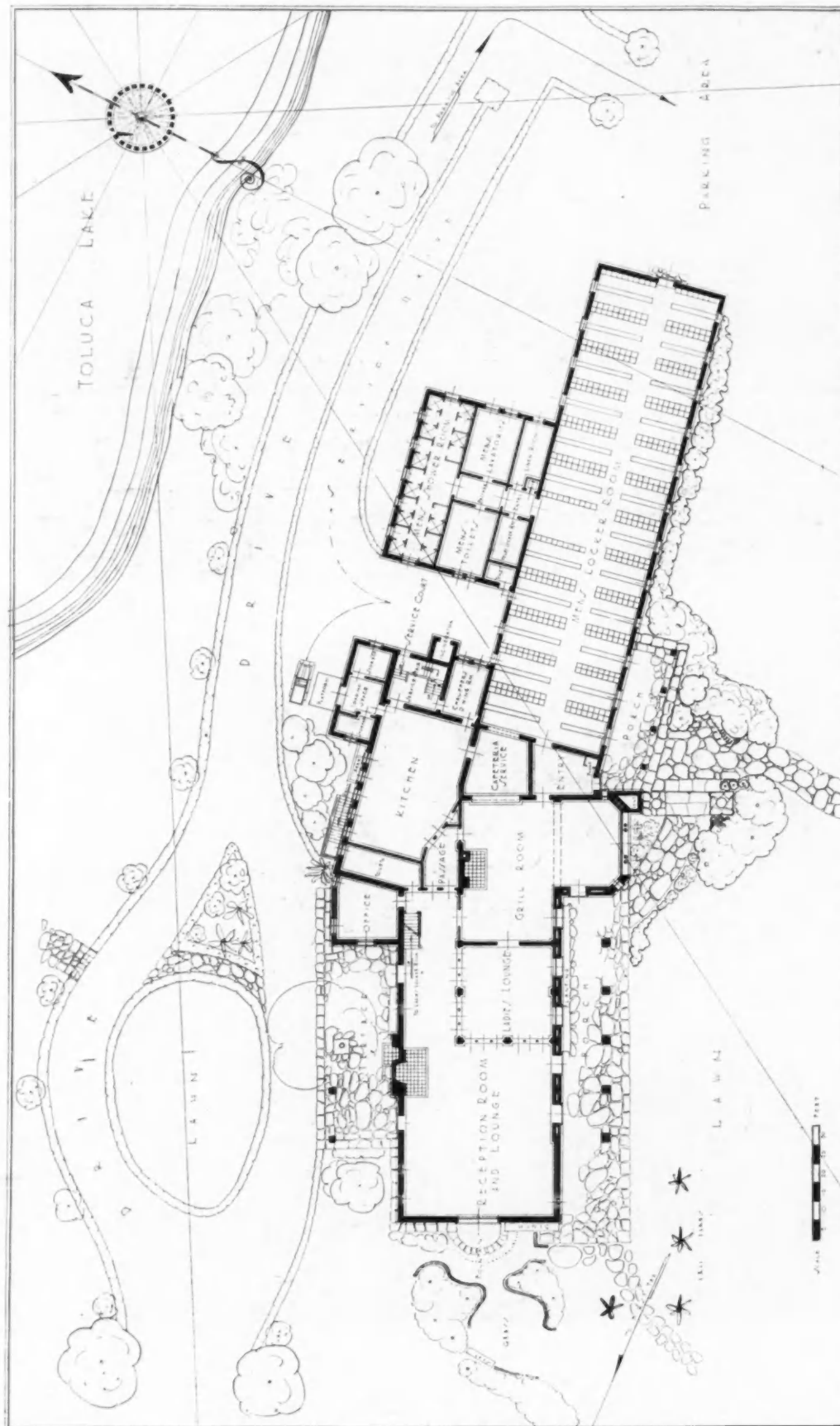


VIEW OF THE SOUTH ELEVATION



*Photos. Mott Studios*

LAKESIDE GOLF CLUB AT HOLLYWOOD, CAL.  
WILLIAM LEE WOOLLETT, ARCHITECT



LAKESIDE  
GOLF CLUB





FRONT ELEVATION



FIREPLACE IN THE RECEPTION ROOM

LAKE-SIDE GOLF CLUB AT HOLLYWOOD, CAL.  
WILLIAM LEE WOOLLETT, ARCHITECT

#### COST AND CONSTRUCTION DATA

YEAR OF COMPLETION : 1925.

TYPE OF CONSTRUCTION : Concrete, brick and frame.

EXTERIOR MATERIALS : Brick.

INTERIOR MATERIALS : Brick, tile, plaster and hardwood with insulated ceiling in locker room.

ROOF CONSTRUCTION : Mission tile.

WINDOWS : Wood casements.

FLOORS : Tile and hardwood.

HEATING : Furnaces.

VENTILATING : In kitchen only.

NUMBER OF MEMBERS : 400.

NUMBER OF BEDROOMS : 2.

NUMBER OF SQUARE FEET : 19,649.

COST PER SQUARE FOOT : \$5.09.

TOTAL COST : \$100,000.

LAKESIDE GOLF CLUB AT HOLLYWOOD, CAL.  
WILLIAM LEE WOOLLETT, ARCHITECT

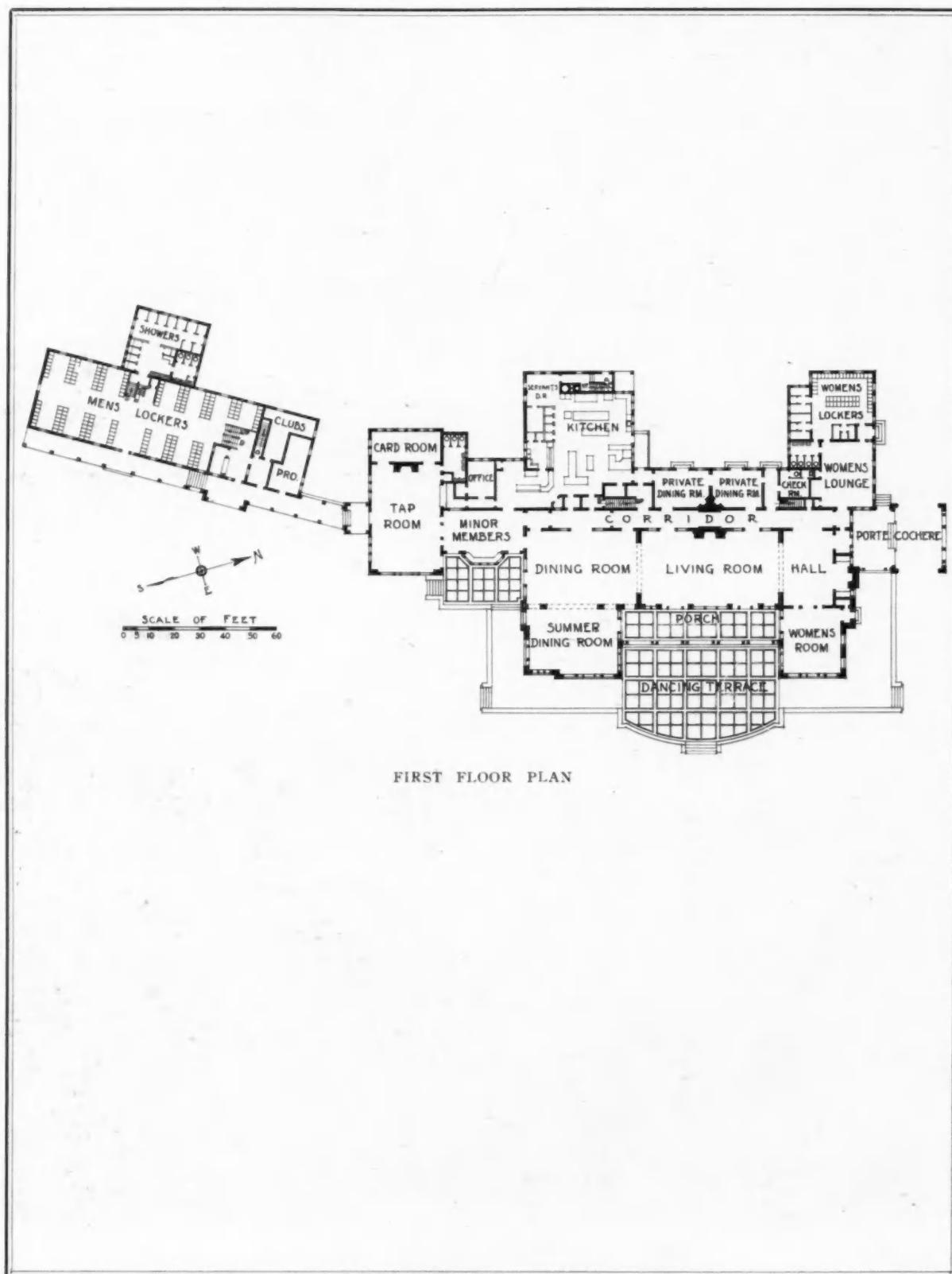


EAST ELEVATION



DANCING TERRACE

KANSAS CITY COUNTRY CLUB  
HOLDEN, FERRIS & BARNES,  
ARCHITECTS. E. T. WILDER &  
E. B. DELK, CONSULTING ARCHS.



FIRST FLOOR PLAN

KANSAS CITY COUNTRY CLUB  
 HOLDEN, FERRIS & BARNES,  
 ARCHITECTS. E. T. WILDER &  
 E. B. DELK, CONSULTING ARCHS.





CORNER OF LIVING ROOM



PRIVATE DINING ROOMS

KANSAS CITY COUNTRY CLUB  
HOLDEN, FERRIS & BARNES,  
ARCHITECTS. E. T. WILDER &  
E. B. DELK, CONSULTING ARCHS.

#### COST AND CONSTRUCTION DATA

YEAR OF COMPLETION: 1927.

TYPE OF CONSTRUCTION: Frame.

EXTERIOR MATERIALS: Shingles and native stone.

INTERIOR MATERIALS: Canvased walls and knotty white pine paneling.

ROOF CONSTRUCTION: Frame and wood shingles.

WINDOWS: Wood, double-hung and casements.

FLOORS: Oak.

HEATING: Vapor vacuum steam.

NUMBER OF MEMBERS: 350.

NUMBER OF CUBIC FEET: 500,000.

COST PER CUBIC FOOT: 41 cents.

TOTAL COST: \$205,000.

KANSAS CITY COUNTRY CLUB  
HOLDEN, FERRIS & BARNES,  
ARCHITECTS. E. T. WILDER &  
E. B. DELK, CONSULTING ARCHS.

## THE SOUTHAMPTON BEACH CLUB

PEABODY, WILSON & BROWN, ARCHITECTS

BY

HAROLD D. EBERLEIN

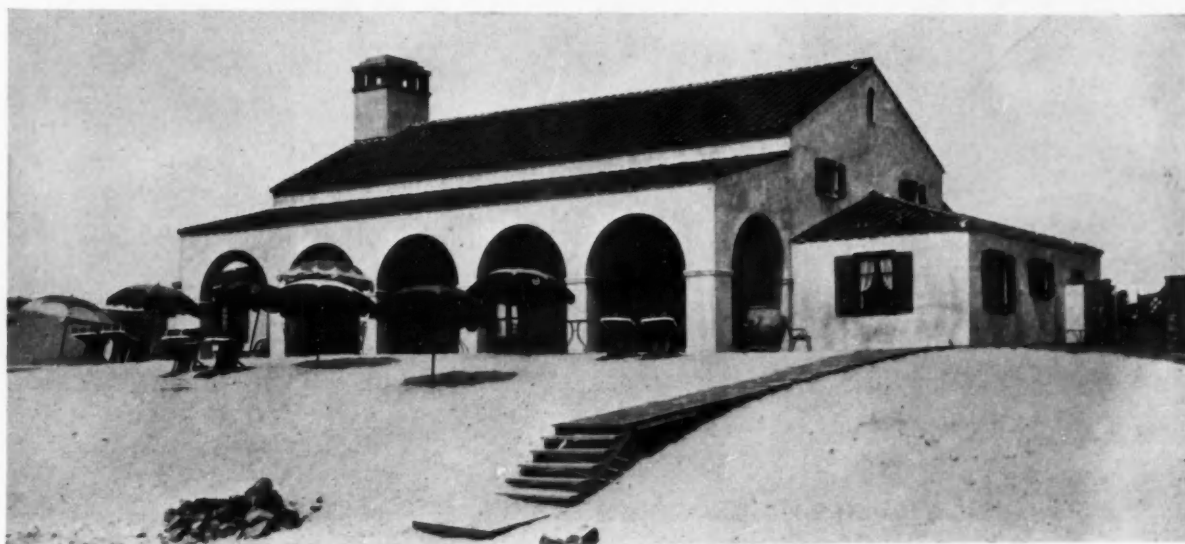
SEASIDE resorts usually have a seamy side to their aspect. The more popular they are as bathing places, the seamier that seamy side is likely to be. Time and again one is put in mind of Bishop Heber's familiar lines, "Where every prospect pleases, and only man is vile." And man's "vileness,"—vileness, of course, in its strictly correct sense meaning cheapness, shoddiness,—takes the form of hideous bath houses and bathing establishments that hopelessly mar the beaches above high water line. This painful and really inexcusable feature of bathing beach "contraptions,"—the term "architecture" can scarcely be applied,—is not confined to America, although perhaps we are more conscious of it here.

When we find a thoroughly well designed and appropriate structure on the beach devoted to the accommodation of bathers, it brings a sense of pleasure and relief, intensified by the recollection of the ramshackle, shanty-town appearance of too many other beaches where there is no excuse for the existence of such a state of affairs. The pavilion and bath houses of the Southampton Bathing Corporation, at Southampton, N. Y., present a striking embodiment of sound ideals in the plan, design and construction of seaside bathing quarters. The conception back of the enterprise is even more significant, in certain respects, than the actual translation of the scheme into visible and tangible form. Both plan and design are admirable in themselves. All the varied requirements of the Bathing Corporation are adequately provided for in the carefully con-

sidered layout of the group; the design is full of interest as a composition, faithfully reflects the plan, and is in every respect appropriate to the environment.

The requirements of the Southampton Bathing Corporation included some of the provisions of a country club. In addition to the bath houses, with all their appropriate and convenient equipment, it was desired to have a casino where dances and other functions might be held; proper appointments for the serving of luncheons, tea or occasional refreshments; comfortable places for the members to sit and read or chat when so disposed; and a large still water pool.

The buildings of the group are on different levels, following the configuration of the dunes, and this diversity of land contour has been turned to excellent account in the composition of the ensemble. The casino stands on top of an elevation from which there is an unbroken downward sweep of sand to the water line. The south or seaward front has a broad, brick-paved loggia commanding a view of the surf and the bathers. Between this loggia and the edge of the dune there is room for a number of round metal tables shaded by large, gaily colored umbrellas which lend a cheerful chromatic accent to the scene. The ranges of bath houses, grouped around their respective courts, to the immediate east and west of the casino, are on the same level. At each side of the casino, flights of steps descend to the lower level on the north from which there is a pleasant outlook over the meadows and Lake



SOUTHAMPTON BEACH CLUB, SOUTHAMPTON, N. Y.  
PEABODY, WILSON & BROWN, ARCHITECTS



THE WALL FOUNTAIN AT END OF POOL

Agawam, with the village in the distance. The central feature of this lower level before the north front of the casino is the large still water bathing pool, along each side of which, beyond the stretch of sand directly surrounding the cement margin of the pool, are brick-paved pergolas. Beyond these pergolas again, both east and west, are ranges of bath houses, on the same level, built about open courts and connected by intersecting alleys. Two main cross alleys, running east and west, divide the groups of bath houses and courts on the higher level from those on the lower, and the eastern alley is also the main entrance way giving access to the pool court and also to the steps ascending to the upper level on which one enters the north veranda of the casino or the upper groups of bath houses. Beneath the casino is a kitchen and, on the main floor level there are also a smaller kitchen and serving room. At the present time fresh towels are given out from the old pavilion, and in it there is also the executive office as well as a supply counter for the dispensing of cigarettes, biscuits and sundry odds and ends likely to be called for. In due time this building will give place to an extension of the group already in use.

The most striking feature of the plan is the

SOUTHAMPTON BEACH CLUB, SOUTHAMPTON, N. Y.  
PEABODY, WILSON & BROWN, ARCHITECTS

THE POOL

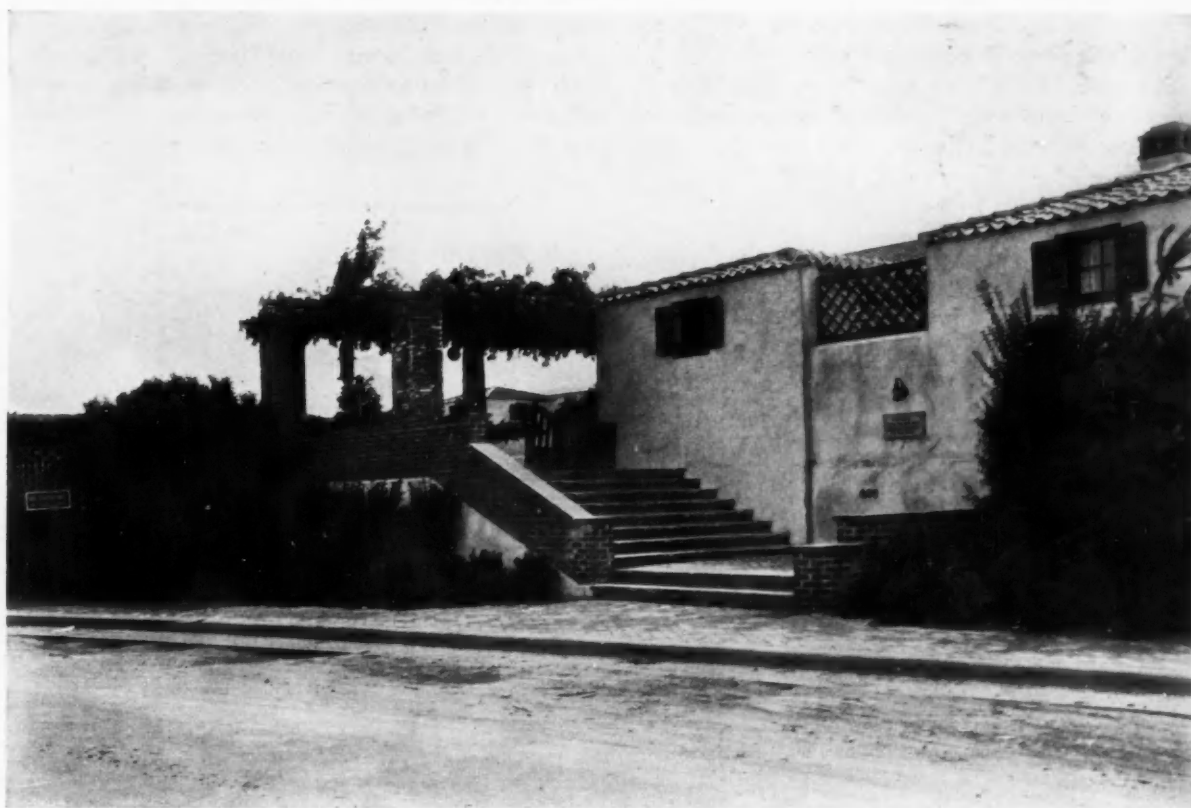


arrangement of the bath houses about a succession of open courts connected by alleys. The scheme is really an expansion of the old Italian principle of the house built around a *cortile*. Indeed, the entire bath house group vividly recalls the arrangement of Pompeii. This element of resemblance can be seen in the illustration of the main eastern alley leading toward the pool court. The openings on the right of this little "Pompeian street" indicate the cross alleys leading to the several courts; the opening on the left shows the steps ascending to the main alley of the upper level for the group on top of the dune. This old Roman town system supplies the very keynote of the entire scheme. For economy of space and economy of construction it has proved highly satisfactory, and it ensures abundance of light and air to every bath house in each group. The bath houses are planned with outer and inner rooms, each being well lighted by windows. The smaller anteroom has benches and hooks, and here wet bathing suits are taken off; the larger inner room is completely furnished with dressing stands, cupboards, chairs and tables.

When the new buildings of the Southampton Bathing Corporation were first under consideration, it was felt desirable that they should be as



DETAIL. WEST END OF SEA FRONT



WEST ENTRANCE

SOUTHAMPTON BEACH CLUB, SOUTHAMPTON, N. Y.  
PEABODY, WILSON & BROWN, ARCHITECTS

near the water as possible. Therefore, to prevent erosion of the beach and to ensure the safety and stability of the buildings, a bulkhead was carried the entire length of the property along the sea front below the water line. The still water pool in the large court is supplied from wells out beyond this bulkhead. The bottom of the pool is appreciably below the surface level of Lake Agawam,—the body of fresh water just across the road from the north side of the property,—and to prevent the seepage of fresh water through the sand from that source into the pool, the bottom and the sides of the pool had to be constructed with special reinforcement and waterproofing.

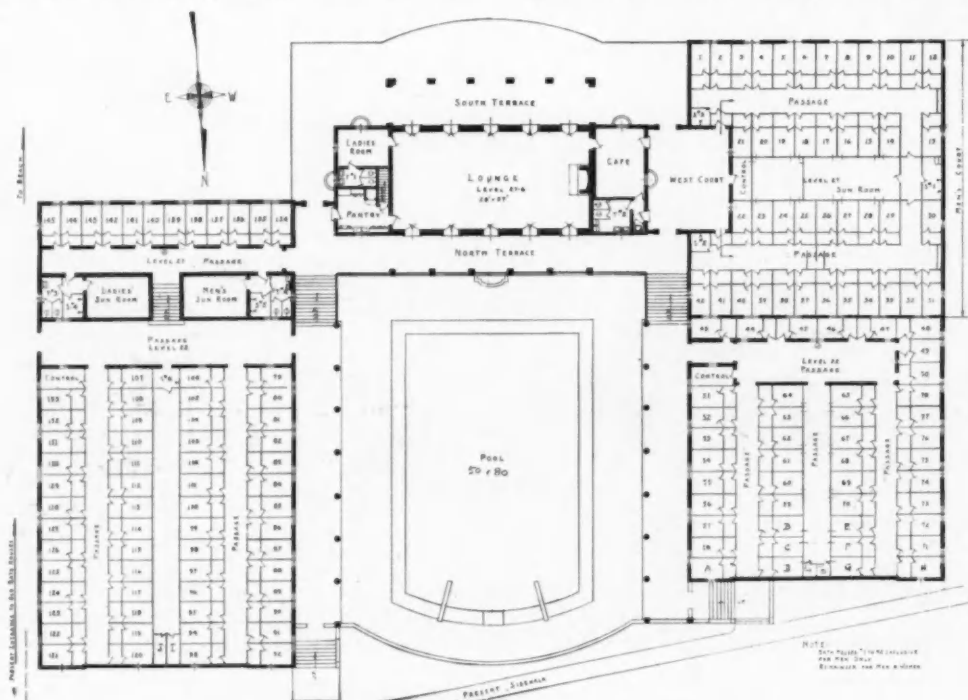
The walls of the casino are stuccoed over metal lath on wooden construction; the walls of the bath houses are built of concrete blocks covered with stucco, and the inside partition walls of the bath houses are made of  $\frac{3}{8}$ -inch asbestos boards. The stucco is a patent cement product, waterproof in itself, and the pigment used is mixed directly in the cement. This pigment is blended in little dashes of red, blue and yellow deftly worked into the gray ground, giving the wall surfaces a pleasant iridescent sparkle on close view and dying completely into a light gray when seen from a distance. All the roofs are of red half-round tiles. Local Long Island red brick of an agreeable hue appears in the paving and in the piers of the veranda along the north side.

The architectural grace of the group is wholly dependent upon the well studied composition and the use of the materials employed in construction.

Apart from several appropriate items of accent, there has been no attempt to introduce any scheme of ornamentation. One of the decorative items is the head of the sea monster in cast stone, from whose mouth water gushes into the wall fountain at the base of the veranda in the pool court, and another is the cast stone fireplace at the end of the great room in the casino, where sea creatures disport themselves on the frieze. Both of these pieces are the work of Frank G. Menconi, the architectural sculptor.

The great room of the casino exhibits an engaging scheme of blithesome simplicity in its decoration. The walls are a pale blue, and the curtains at the long windows are of light jade green sateen. The rope moulding, which is the only cornice between the wall surfaces and the arched ceiling, is light green and gold, and the lighting fixtures, which were especially designed for the room, are also in green and gold.

The accepted design for the buildings was the result of a competition. In view of the constant vicissitudes of a club organization, with building committees almost inevitably changing their personnel at each annual election, it was felt necessary to stipulate that one member of the club should remain in responsible control during the entire period of building in order to secure continuity of effort and avoid the mistakes so likely to occur through changed personnel of committees. This one person was Marshall Dodge, and it is proper in this place to make due acknowledgment of the tact and sympathetic understanding with which he discharged his office.



SOUTHAMPTON BEACH CLUB, SOUTHAMPTON, N. Y.  
PEABODY, WILSON & BROWN, ARCHITECTS

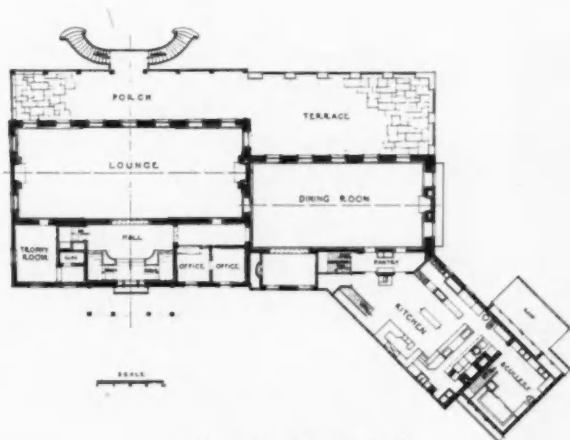


*Photos. Van Ande*

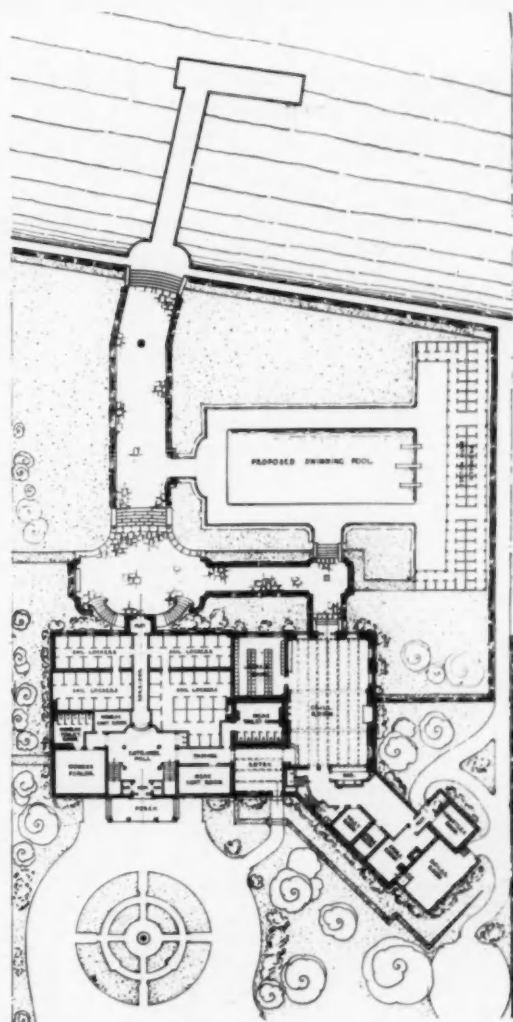
MANHASSET BAY YACHT CLUB AT PORT  
WASHINGTON, N. Y. TH. ENGELHARDT, ARCHITECT



THIRD FLOOR PLAN



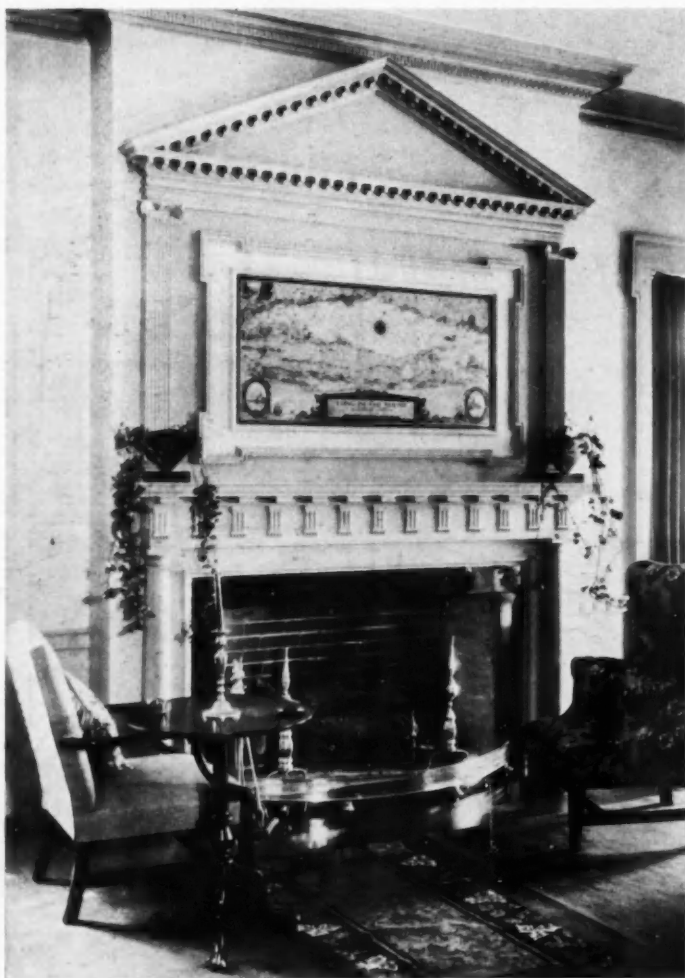
SECOND FLOOR PLAN



GROUND FLOOR PLAN



VIEW OF THE GRILL ROOM



FIREPLACE IN THE LOUNGE

MANHASSET BAY YACHT CLUB  
AT PORT WASHINGTON, N. Y.  
TH. ENGELHARDT, ARCHITECT





THE ENTRANCE COURT



AN ALCOVE DINING ROOM

MANHASSET BAY YACHT CLUB  
AT PORT WASHINGTON, N. Y.  
TH. ENGELHARDT, ARCHITECT



GENERAL VIEW

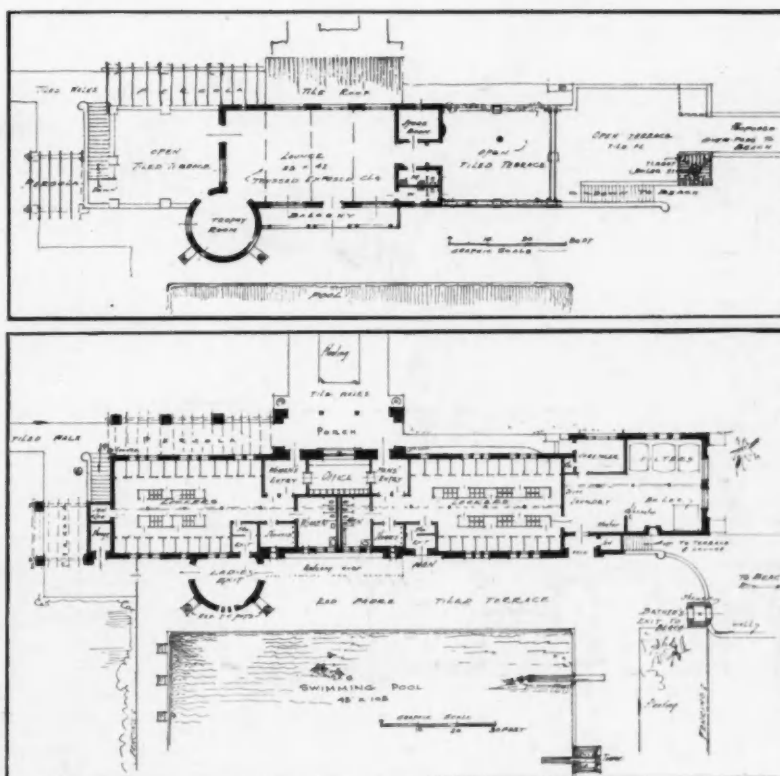
*Photos. Padilla Studios*

REAR ELEVATION

SAN CLEMENTE BEACH CLUB  
AT SAN CLEMENTE, CAL.  
V. WESTBROOK, ARCHITECT



SWIMMING POOL



SAN CLEMENTE BEACH CLUB  
AT SAN CLEMENTE, CAL.  
V. WESTBROOK, ARCHITECT

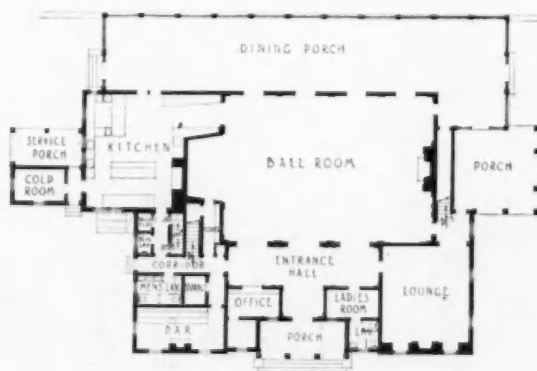


*Photos. Richard Averill Smith*

ENTRANCE COURT AND FRONT ELEVATION



SECOND FLOOR PLAN



FIRST FLOOR PLAN

RIVERSIDE YACHT CLUB, RIVERSIDE,  
CONN. BREED, FULLER & DICK, ARCHITECTS





BALL ROOM FIREPLACE

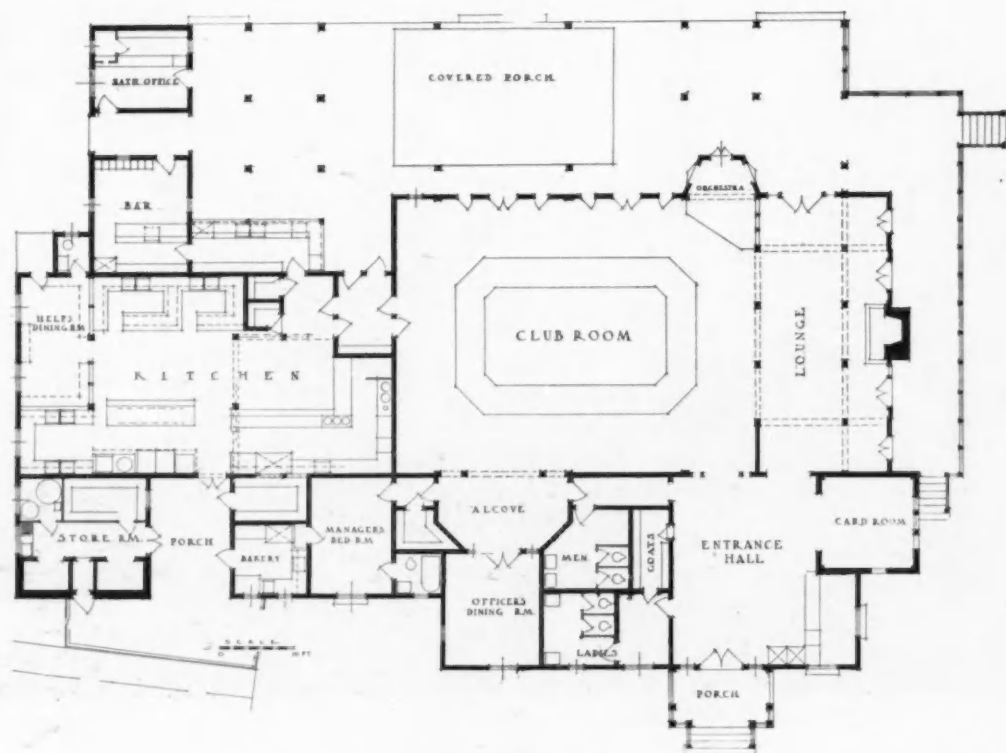


FIREPLACE END OF THE CORNER LOUNGE  
RIVERSIDE YACHT CLUB, RIVERSIDE,  
CONN. BREED, FULLER & DICK, ARCHITECTS



*Photos. Wurts Bros.*

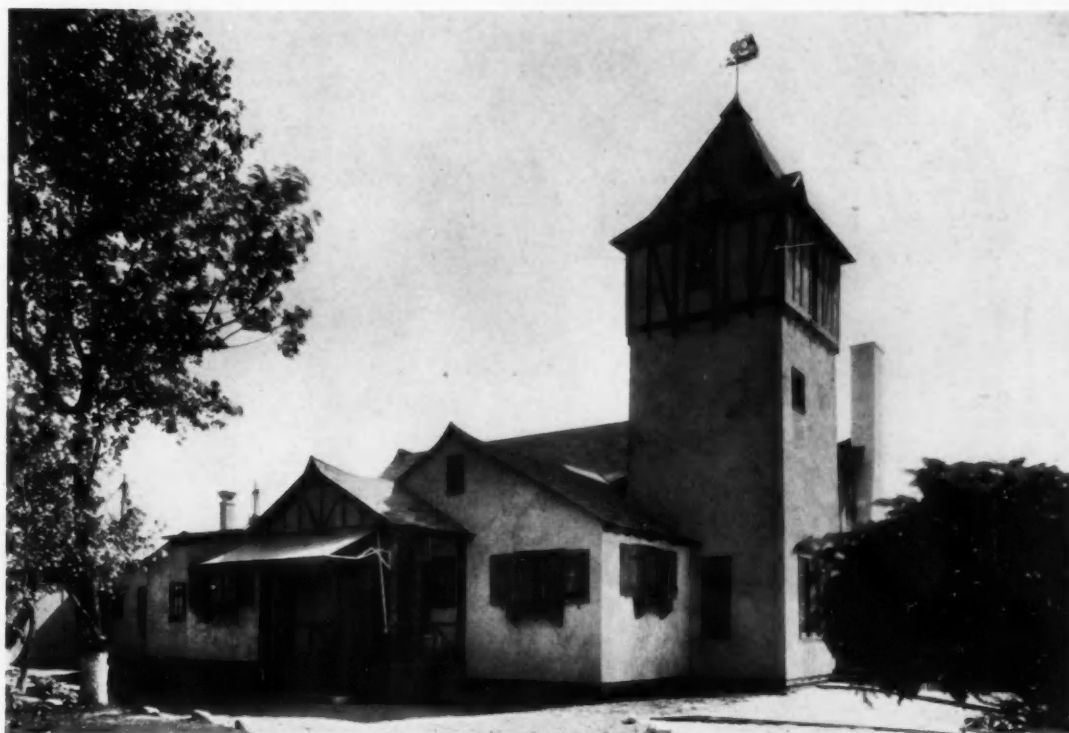
THE SWIMMING POOL AND OPEN PORCH  
 SANDS POINT BATH CLUB, SANDS POINT,  
 N. Y. KENNETH M. MURCHISON, ARCHITECT



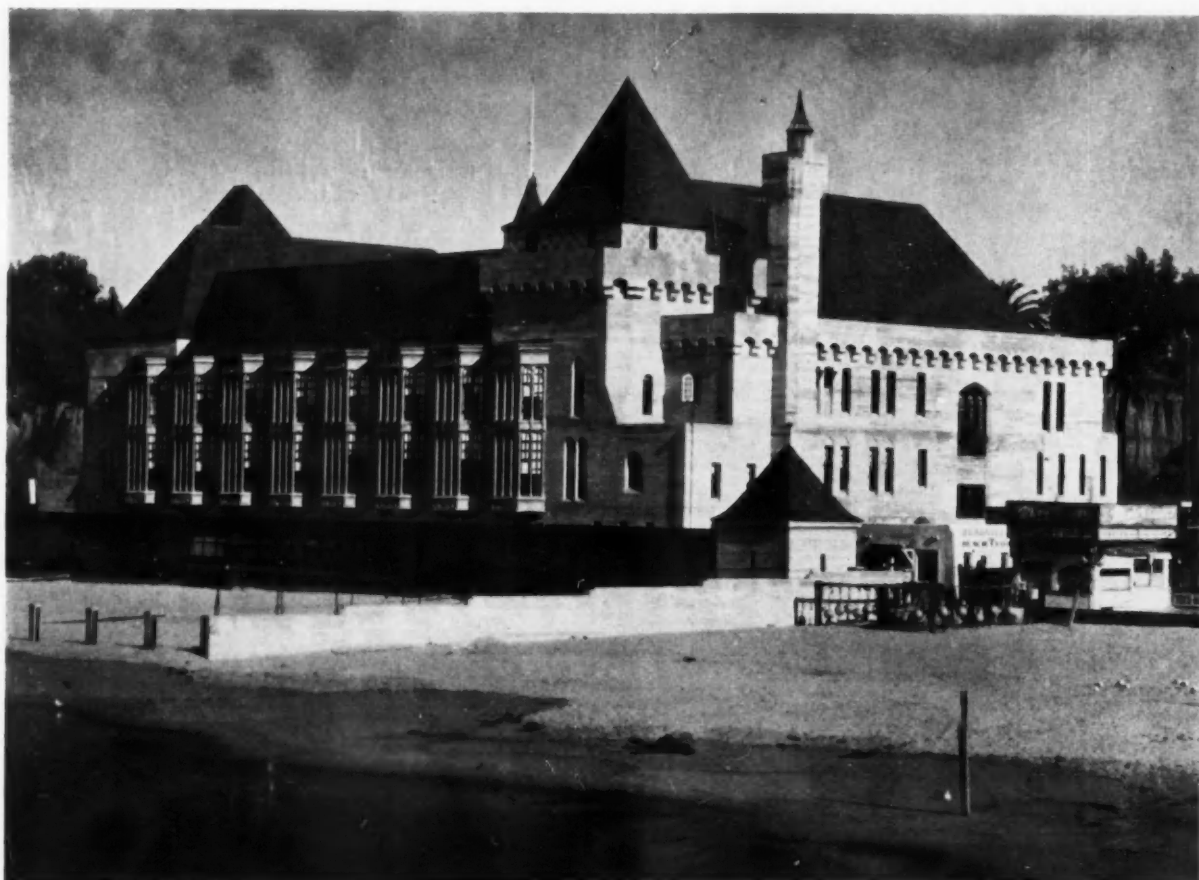
MAIN FLOOR PLAN



MAIN CLUB ROOM WITH LOUNGE BEYOND  
SANDS POINT BATH CLUB, SANDS POINT,  
N. Y. KENNETH M. MURCHISON, ARCHITECT



MAIN ENTRANCE



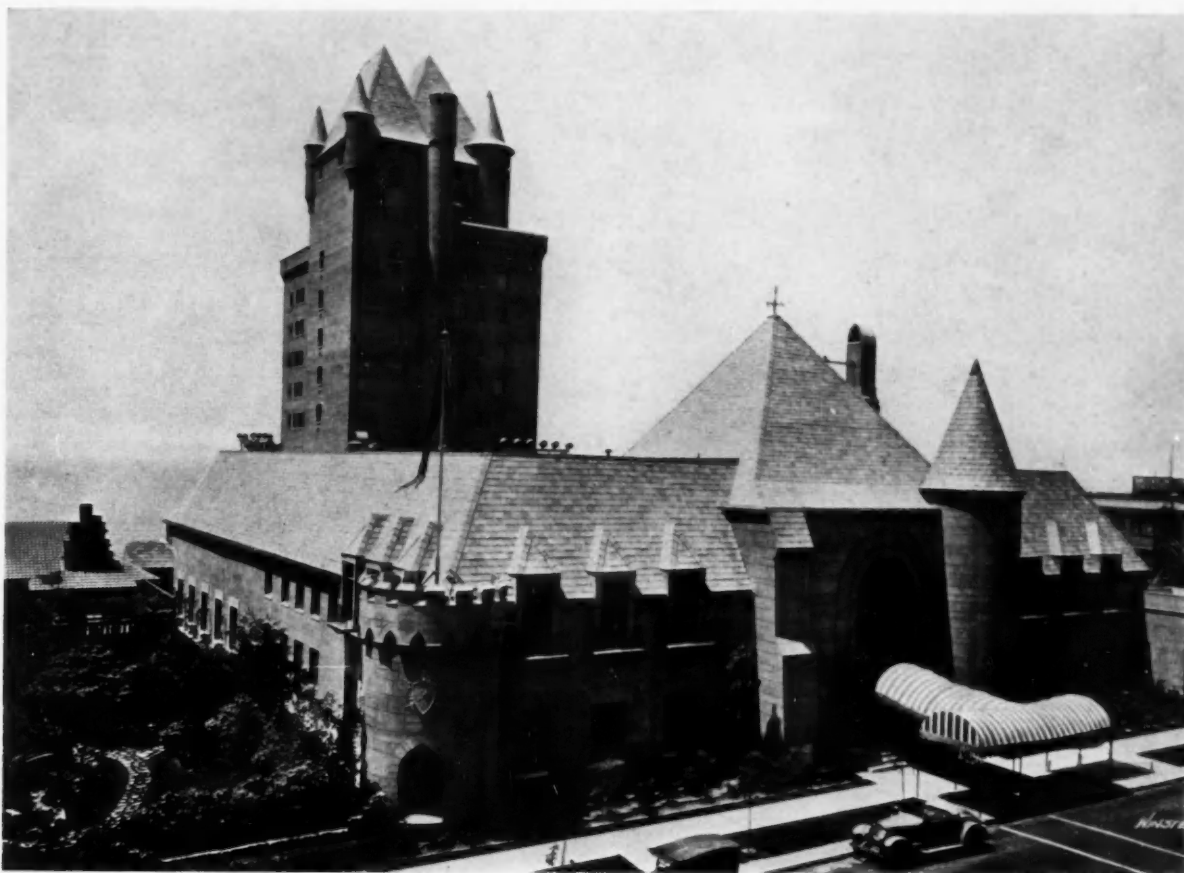
*Photos. Mott Studios*



ABOVE, VIEW OF CLUB FROM  
BEACH. BELOW, DINING ROOM

DEAUVILLE BEACH CLUB AT  
SANTA MONICA, CAL. MORGAN,  
WALLS & CLEMENTS, ARCHITECTS





*Photos, Brown & Ward and Winstead Bros.*

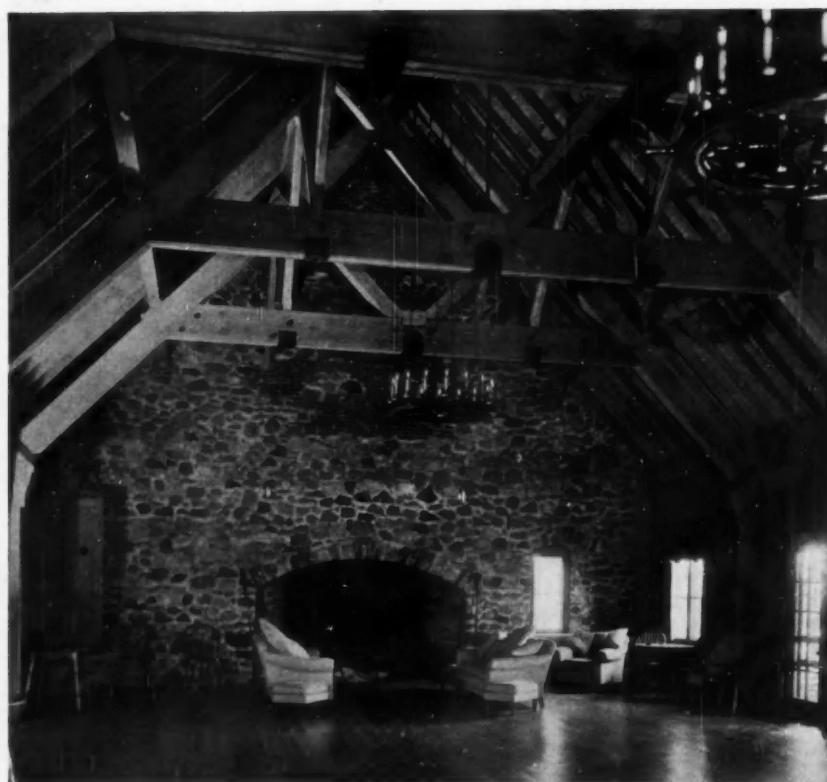
ABOVE, THE MAIN ENTRANCE  
BELOW, VIEW OF GRAND HALL

THE PACIFIC COAST CLUB AT  
LONG BEACH, CAL. CURLETT  
AND BEELMAN, ARCHITECTS



*Photos. Van Anda*

REAR ELEVATION OVERLOOKING LAKE



FIREPLACE IN MAIN CLUB ROOM

LAKE SUNAPEE YACHT CLUB, SUNAPEE,  
N. H. PRENTICE SANGER, ARCHITECT

## BOOK DEPARTMENT

### OUR CITIES TODAY AND TOMORROW

BY  
THEODORA KIMBALL HUBBARD AND HENRY VINCENT HUBBARD  
A REVIEW BY ROBERT STUYVESANT HOOKER

THE tendency of vast numbers of people to congregate in the metropolitan centers of the country, which is the natural creation of the modern industrial and commercial system, makes it imperative that the growth and improvement of urban districts should be carefully planned to provide suitable living conditions for the great populations of the present and the still greater populations of the future. Since the beginning of history, cities have been allowed to spring up in a more or less haphazard fashion, and while there are many examples of fine city planning notable from an artistic point of view as applied to civic centers and great avenues and boulevards, it is only recently that the work of city and regional planning has come to be practiced as a profession. The great immensity of the problems with which modern city planners are confronted demands that decisions be based on careful studies of conditions as they exist in the particular city and on a well grounded estimate of what the conditions are likely

to be in the future, as well as on a careful observation of the methods employed in other cities. Those who are in charge of planning great cities no doubt have a full realization of the desirability of more careful planning, but it usually happens that they are called upon to render their decisions in such a limited time that there is no opportunity of going into the complicated considerations involved, and plans are allowed to be put in operation which, even if they do not result in actual confusion, are likely to fall far short of what might have been accomplished with a proper amount of study. That cities should be built and rebuilt in the old haphazard manner is entirely out of keeping with up-to-date American ideals. Our great industries have taught us to consider problems in their broader aspects and in the light of future as well as of present needs. Certainly there is no modern problem that presents a greater need of being studied in a comprehensive manner than does the planning for the growth and improvement of cities and the

## *"Hotel Planning and Outfitting"*

EDITED BY  
C. STANLEY TAYLOR and VINCENT R. BLISS

Here is a volume which for the first time adequately reviews the entire subject of the modern hotel,—its planning, designing, equipping, decorating and furnishing. It covers every detail, from the beginning of sketch plans to the registration of guests when the house has been completed and opened. All the different types of hotels are dealt with,—the Modern Commercial Hotel, the Residential or Apartment Hotel, the Resort Hotel, and the Bachelor Hotel. The volume is replete with views of hotels in different parts of the country; their exteriors and interiors, and in many instances their plans are included and fully analyzed.

The editors have been assisted in the preparation of the work by widely known hotel architects and interior decorators and by actual operators of hotels,—practical men, experienced in the management of the "back" as well as the "front" of a hotel. The volume's treatment of hotel furnishing and equipping constitutes the final word on this important subject. There are included views of hotel restaurants, cafeterias, kitchens, pantries, "serving pantries," refrigerating plants and all the departments which are necessary in a modern hotel of any type. The work is of inestimable value to architects and engineers, as well as to practical hotel men.

438 pages, 8½ x 11½ inches—Price \$10

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## College Architecture in America

### *Its Part in the Development of the Campus*

By

CHARLES Z. KLAUDER and HERBERT C. WISE



Music Building, Smith College  
Delano & Aldrich, Architects

**A** NEW and ever higher standard is being established for the architecture of educational structures of all kinds. Some of the most beautiful buildings in all America are those venerable halls in academic groves in Charlottesville, Cambridge, Princeton and elsewhere built by early American architects, and now after long decades of indifferent designing and careless planning American architects are rising anew to the situation and are designing educational buildings of every type which closely rival even the best work of a century ago, while in planning and equipment they establish a standard which is wholly new.

**I**n this valuable and important work two widely known architects of educational buildings collaborate in reviewing the entire situation as it applies to college and collegiate architecture. They have carefully studied practically every important institution in the country, and in their text they discuss administration buildings; dormitories; recitation halls; chapels and auditoriums; gymnasiums; libraries; and structures intended for certain definite and specific purposes, such as the teaching of music, all this being well illustrated with views of existing buildings and in many instances with floor plans and other drawings. A valuable and extremely practical work to add to the equipment of any architect's office.

301 Pages, 7½ x 10 Ins.

Price \$5, Postpaid

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unwise regulations in connection with the zoning laws or other ordinances affecting city planning may have a well nigh disastrous effect on the appearance of buildings which the architect is permitted to build. That the reverse is also true is proved by the popularity of the striking and pleasing set-back style which has resulted from adoption of the city zoning ordinances in New York. Although in this day of specialization it would be impossible for every architect to be an authority on the subject of city planning, it is often quite important for him to have at hand up-to-date information of the most authentic kind available. Being a new and a rapidly developing science, it is quite impossible that any very lengthy studies or investigations can be made, since by the time a great mass of material had been collected and compiled in usable form, the material would already be out of date. Several periodicals publish articles on the subject from time to time, and there are one or two publications devoted entirely to its interests.

In order to ascertain to a greater extent just what has been accomplished in the field among the cities of the United States and to discover what conclusions and basic principles might be formulated from a study of the existing planning operations, Harvard University made a grant from the Milton Fund for Research to T. K. Hubbard and H. V. Hubbard for "a survey and analysis of city planning and zoning progress in the United States." It was obvious that if the field of study were to cover a sufficient number of cities and regions to be representative of the whole country, and if this number were to be studied contemporaneously, the result would have to be a birdseye view, merely scanning the surface of planning in the United States today to discover what fields are fertile and what barren, and where one may go for further study of promising methods. It was obvious, too, that the facts gathered during the field study must be quickly assorted and presented before changed conditions and situations should render them less valuable because of their being stale. As ammunition for the technical planner or the city official, the greatest usefulness of a rapid study appeared to be in the setting forth of these freshly accumulated facts primarily in their relation to one another and to the whole field now embraced by what is called "city and regional planning." In the five months allotted to the study of the assembled data, no attempt was made to study housing except as it is related to zoning, nor was a study made of examples of new towns such as have been already ably discussed by John Nolen and others. Other specialized fields, such as the comprehensive planning of utilities, especially of sewerage and water supply systems, which are essential to regional development, were also omitted, because of the limitations of time. The authors confined themselves to the elements of planning commonly dealt with today by the general practitioners of city planning.

This work, which is the result of the investigation, deals with zoning, control of land subdivision, major street systems, mass transportation, rail, water and air terminals, park and recreation areas, aspects of the city's appearance, with the legal and administrative means of effecting city and regional planning, and with the education of the public to support planning measures. Howard K. Menhinick (a graduate in city planning of the Harvard School of Landscape Architecture) was made field representative and visited about 120 cities and 15



regions surrounding them. Many cities have already employed the services of those competent to deal with city and regional planning, but in most cases their growth and rate of change have been so rapid that time has not permitted the basing of plans on the proper amount of research in order to obtain the greatest possible amount of information immediately usable.

In the fight against congestion, against unbalanced distribution of urban population and unwholesome urban environment, it is essential to know what experiments are being made in the various cities of the United States and what results have come from specific lines of action in dealing with certain situations. In spite of all its handicaps, the science of city planning is advancing by leaps and bounds, and today there are over 650 cities having official planning commissions. The profession is very active, and its practitioners are organized under the American City Planning Institute. There is no state where some form of the movement to secure the benefits of planning and zoning does not exist. The introduction of state laws authorizing planning and means of financing plans, debates on the enactment of municipal ordinances creating plan commissions or adopting zoning regulations, the choice of members of planning bodies, and the submission to voters of bond issues for permanent plan improvements, are all subjects of widespread news value, featured in national as well as local press services and brought constantly to public attention in the daily papers. The phases of city and regional planning are subjects of vital discussion in the meetings of state and national municipal leagues, state and national associations of real estate boards, chambers of commerce, and local and national societies of civil engineers and architects and landscape architects. Other societies interested in the advancement of city and regional planning are also actively working toward the establishment of fundamental planning principles. At Harvard University there has long been a course of instruction in city planning which has now been expanded into the Graduate School of City Planning, with an extensive program of research. Many other universities or colleges also give brief courses or parts of courses dealing with the planning of cities.

Of all the groups of professional and business men who take an active interest in the city planning movement there is none which it concerns more vitally than it does the architectural profession. Wherever new city improvements are made, new buildings will be erected, and it is the business of the architect to see that these buildings conform in the highest possible degree to the principles of good architecture. It is almost a foregone conclusion that practically every city planning body includes in its personnel at least one architect, and often there are several. Architects are involved in city planning by the very fact that cities are composed of buildings and that it is the quality and character of these buildings and the manner in which they are disposed in relation to one another, that causes the city to be beautiful and a good place to live in or otherwise. By his training the architect is prepared to grasp the significance of the several features that go to make up a successful plan. He has been trained to see at a glance the advantages or disadvantages that lie in a given plan which would not be nearly so apparent to the untrained eye. Another reason for the architect's interest is that

*An Authoritative Work on*  
**"THE GREEK REVIVAL"**

By HOWARD MAJOR



**T**HE search for effective types of architecture for domestic use led logically to the re-discovery of the style known as the "Greek Revival." In the hands of a few particularly skillful architects it is being used with marked success, their use being based largely upon study of such examples as have survived the period, just prior to the Civil War, when use of the type was widespread throughout the United States. It is an entirely American style, founded not upon a following of current English architecture but upon a study by Americans of classic types adapted to domestic uses.

Mr. Major's excellent work is the result of a careful study of the style as it was interpreted in the North and East, and particularly in the South. The illustrations of exteriors and interiors are full of suggestions for anyone seeking a variety of architecture bold, simple and effective, which supplies a fitting background for life in America. The book is richly illustrated, and shows existing work, large as well as small, in both city and country.

236 Pages; 7½ x 10¾ Inches. Price \$15

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counties and regions in all parts of the United States to secure first hand information from responsible officials and leaders in city planning movements as to local procedure and results. Some of the field notes taken by Mr. Menhinick on subjects of particular current interest will be found in the appendix. All the notes have served as the basis of the comments and conclusions embodied in the chapters of this book. There has been no attempt to present tabulated statistics of the questions answered. The series of local comments found worth while to include in the appendix and the many more worked into the fabric of the work itself are far more useful than a more complete series of mere statistical summaries of facts collected in the selected cities and counties would be.

In discussing the present status of the movement in the United States, a brief but interesting history of progress up to the present time is given together with outstanding points in present-day practice. The legal and administrative phases are discussed, and there are given descriptions of the wide variety of planning bodies and their various names and titles, including city, regional and state organizations of an official or semi-official character. In order to attain any measure of success, a movement such as the improvement of a city must have the whole-hearted support of the citizens who are to pay for it and who will have to live with the new improvements. Public education is therefore an important branch of city planning science, and methods of bringing a realization of the great advantages of a new plan for city improvement before all the people are

discussed at considerable length. The technical procedure is, of course, a matter of the greatest practical importance to anyone interested in city or regional planning, and each of the various steps furnishes material for a chapter, as does also a discussion of financial programs. Architects who are readers will be more especially interested in the chapters on Control of Platting; Zoning; Street Plans; Transit and Mass Transportation; Rail, Water and Air Terminals; Parks and Recreation Areas; and the city's appearance. It is indeed hard to imagine an architectural organization that would not find some of the great mass of information contained in these pages of value in helping to solve some of the many problems with which it is constantly confronted. The work has already been called "The City Planning Baedeker," and although the authors do not profess to any such great degree of completeness, it would certainly be a difficult task to provide a more thorough work on such a complicated and rapidly changing subject.

Never in the history of the world have cities grown as rapidly as in America today. Changes which have come to Chicago and Detroit during the past few decades represent only the two most conspicuous examples of what is widespread growth. As has already been suggested, the impossibility of forecasting a city's growth creates a problem which is difficult indeed to solve. It is a problem which demands all the data which experience could provide and research present if it is to be solved.

**OUR CITIES TODAY AND TOMORROW.** By Theodora Kimball Hubbard and Henry Vincent Hubbard. 389 pp. 7 x 9½ ins. Price \$5. Harvard University Press, Cambridge, Mass.

## COLONIAL INTERIORS

Photographs and Measured Drawings of the Colonial and Early Federal Periods

By LEIGH FRENCH, Jr., A. I. A.

**I**NTERIOR woodwork during the Colonial and early Federal periods was exactly what is demanded for "Colonial" interiors today. The character of workmanship in the colonies insured craftsmanship of excellent quality, and this, together with design carefully studied from the simpler contemporary English work, resulted in woodwork which it would be difficult to improve upon. For this reason close study is being made of such old American interiors as still exist, and measured drawings make possible the reproduction today of much of the finest woodwork of the seventeenth or eighteenth century. These forms, while they involve not a little subtlety in the details of design, demand merely the use of simple mechanical processes which are not beyond the skill of any reasonably proficient woodworker, sometimes of an ordinary carpenter.



**I**N this valuable work on the early American periods there are given illustrations from new photographs of interiors of the time, many of which are little known. These illustrations are of rooms of different kinds and of widely different types,—the early, somewhat severe type as well as that which was later and more refined and luxurious. Valuable illustrations are supplemented in many instances by invaluable working drawings,—details of wall paneling, mantels, over-mantels and fireplace surrounds; door and window trim; china closets; newels, balusters and other details of stairways, and designs for the

stenciling of floors, together with notes on the colors originally used. It is a volume which in its practical usefulness will be of great value to architects whose work involves much use of early American interior design.

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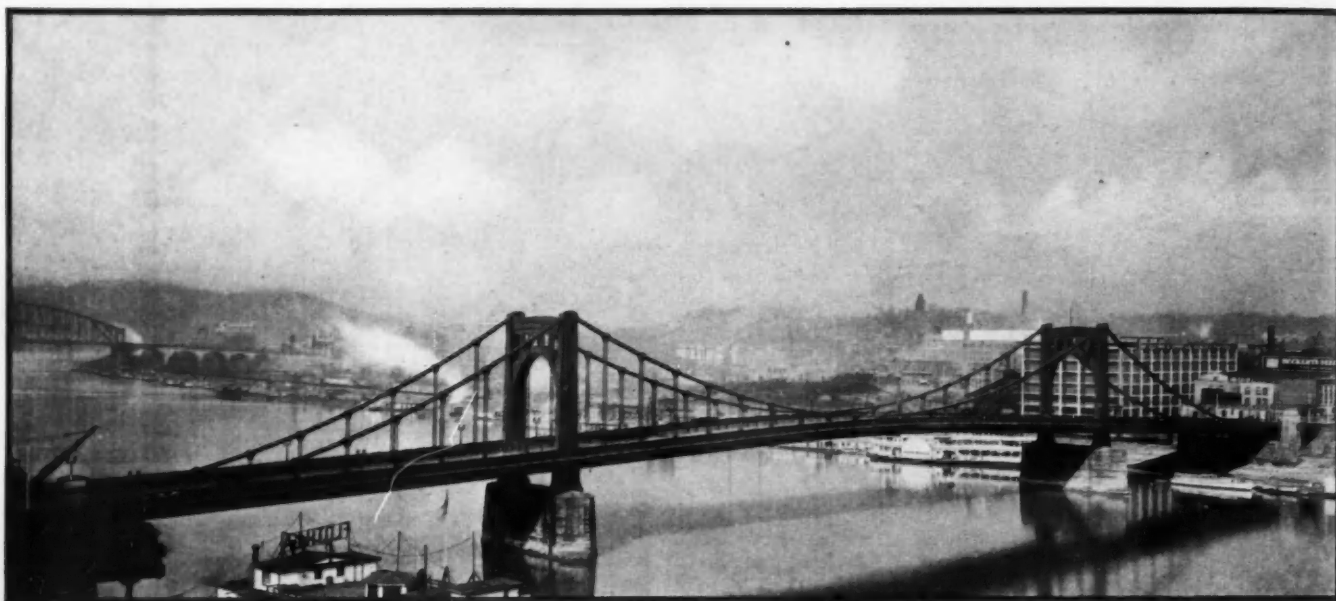
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TECHNY FIELDS GOLF CLUB, TECHNY, ILL.  
ALBERT R. MARTIN, ARCHITECT

*The Architectural Forum*

# THE ARCHITECTURAL FORUM

VOLUME LII

NUMBER THREE

MARCH 1930

## THE CONSTRUCTION OF COUNTRY CLUBS

BY

JEROME PAUL JACKSON

OF THE OFFICE OF ROGER H. BULLARD, ARCHITECT

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THE character and type of construction adopted for any particular project will depend on many factors. Prominent among them are the geographical location, type of site, size of club, amount of money available, and whether or not it is a temporary or permanent structure. But in any case, good foundations, a dry basement, substantial walls and floors and a weather-tight roof are essential. No amount of clever design or fine interior finish is of any lasting benefit if these features are lacking.

**FOUNDATIONS.** Poured concrete foundations are, without question, the most desirable in the majority of cases and the concrete should be dense, using the best of materials. It is also desirable that a well tested waterproofing compound be incorporated in the mixture. Next in desirability, if suitable local stone is available, is the good, old fashioned stone wall. Stone will require a greater thickness and mass than will concrete, and also the employment of skilled masons. To insure a good wall, great care must be exercised to see that the stones are all well bonded and that all joints and voids are well filled with mortar which should be rich in cement and waterproofed. After the wall is completed, it should be carefully pointed up on the *outside*, as well as on the inside, and the joints struck smooth. The outside is the more important. In cases where the stone itself shows any tendency to porosity, the entire outside should be well parged with cement mortar in addition to the pointing.

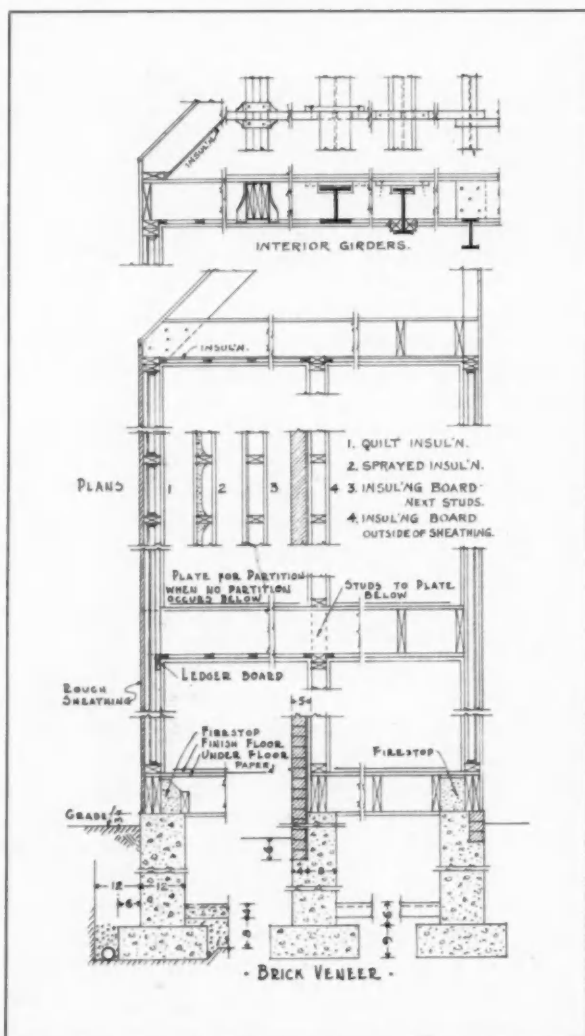
In some localities and under some conditions poured concrete or stone foundations are impractical or are of excessive cost. Where this is

so, it is often possible to build good substantial foundations of concrete blocks. These do not require expensive forms, as does poured concrete, or especially skilled masons, as does good stone work. It is also built very rapidly. But good blocks must be used, and care must be taken to see that the joints are thoroughly filled and that they are well pointed, just as with stone work. If the blocks themselves are not waterproofed, or if the ground conditions are damp, it is also well to parge the entire outside with cement mortar, and in some cases even to fill the voids of the blocks solid. Whatever material is used, the foundations must always be made heavy enough to carry the superimposed loads, and, in addition, the horizontal thrust of retained earth must be considered. Many walls, sufficiently thick to support the vertical loads alone, fail from lack of sufficient thickness and mass inertia. Do not skimp in thickness of foundations; the saving in original cost is not great, and the consequences of skimping may be very costly.

**DRAINAGE AND GROUND WATER.** Careful study should be given to the site and the natural and finished grades and levels, to insure proper surface and sub-drainage. If there is any likelihood or possibility of there being ground water at or about the footing levels, footing drains should be provided around all excavated portions of the basement. These should be connected and extended by a tile drain to some lower point which will always insure adequate drainage.

**MAIN WALLS.** For the main walls, above grade, there are available all of the standard materials and methods of building, as well as com-

binations of them. The simplest, as well as the cheapest, is of course, wooden frame, using upright studs spaced 12 or 16 inches apart, and covered on the outside with boards and some form of weather-resisting material and lathed and plastered inside on the studs. Except in very small structures, and where the utmost economy is required, the studs should not be less than 2 inches by 6 inches and spaced preferably 12 inches on centers. It is strongly recommended too that all frame walls be insulated. A careful study of the various types of insulating materials now on the market should be made before choosing the one best suited for the particular project. The insulating materials vary in efficiency, method of application and in cost. There are flexible insulators placed between the studs, sprayed insulating material, various fiber boards, insulators in roll and in sheet form and those used as a filling between studs, joists or rafters. With brick or stone veneer, waterproof paper should be used over the entire exterior of the frame, with extra strips around all openings.



In using brick or stone veneer on frame, there is no particular advantage in leaving an air space between the veneer and the supporting frame wall. Such an air space only serves to complicate and increase the cost of window construction and makes it more difficult to prevent wind and water entering between the frame and veneer. Only working space for the veneer is required.

Solid brick or stone walls are probably the most satisfactory and desirable in the long run. They are substantial, strong to carry floor and other superimposed loads, have mass and inertia to withstand shocks and thrusts, have reasonable coefficients of heat transmission, and, when well built, are weatherproof, with practically no upkeep cost. But to be satisfactory, they, too, like everything else going into a building, must be carefully designed in the first place and then carefully built; otherwise, they may prove a constant source of trouble. They must be of sufficient thickness, they must be properly bonded, and all joints must be thoroughly filled with good mortar and the pointing must be well done. The tendency is for careless mechanics to slight the cross joints and all joints in the interior of the wall. In face brickwork they sometimes simply butter the edges of the brick. This carelessness is the cause of much of the present-day criticism of masonry walls. All stone and brick should be thoroughly bedded and jointed full, and the walls should be *solid masonry*.

A good solid brick or stone wall may, with safety, except in unfavorable seashore locations, be lined with 4 inches of hollow brick or hollow tile and be plastered upon this hollow brick or tile. Or, in place of this lining, wooden strips may be fastened to the inside of the wall and metal or wooden lath nailed to them. Or again, if objection is raised to the wood furring strips, 1½-inch hollow split tile may be used as furring and as a plaster base. Any one of these methods is satisfactory under inland conditions. Where the climatic conditions are especially severe, however, such as those on Long Island and certain other parts of the coast, it is sometimes advisable to provide a larger air space back of the main wall, and an inner wall to support the plaster. In fireproof construction the use of a 3- or 4-inch air space and 3-inch hollow tile blocks is a good method. In non-fireproof construction a 2- to 4-

Diagram Showing Various Details of Frame and Brick Veneer Construction. Four Types of Interior Girders are Shown at the Top of the Diagram, Plans of the Girders above the Sections



inch air space and 2-inch by 3-inch studs from floor to ceiling, to receive the lath, is good. Load bearing hollow tile of good quality can now be obtained in most localities. It comes in a great variety of shapes and sizes, some simple, some complicated. Usually the simpler forms are the best. The exterior may be covered with cement stucco or with shingles or clapboards, etc., and the inside plastered directly on the tile. The outside may be faced with brick, which can be easily bonded to the tile. In the writer's experience, the tile with air spaces running horizontally and made in two sizes, 5-inch by 4-inch by 12-inch, and 5-inch by 8-inch by 12-inch, with corresponding corners, are very satisfactory. In using tile, care must be taken to avoid excessive concentrated loads, such as might occur under girders or next to windows of wide opening. If such are necessary, provision must be made either by the use of solid brick, reinforced concrete or steel or lally columns. The precautions against damage from severe climatic conditions, which are advisable for brick walls, apply also to tile.

Well made concrete blocks make a substantial wall, a wall that serves as an ideal base for cement stucco finish. But on the inside, except in very dry localities, it is not desirable to plaster directly on the blocks. It is better to furr and lath. In other respects, cement blocks can be used much the same way as hollow tile.

Use of reinforced concrete for walls of club houses will seldom prove advisable as the form work required is so complicated that the cost is generally excessive.

**FLOORS.** No matter whether the club house be small or large,—frame, or masonry and wood,—it is very desirable that the main floor be fireproof because many fires originate in the basement. A fireproof floor will often confine, until it can be extinguished, a fire which otherwise might destroy the entire building. The additional cost over wood joist construction, with the joists protected by metal lath and plaster, need not be excessive. In addition, if the superstructure is frame, all woodwork will start on a solid uniform masonry bearing, eliminating uneven shrinkage.

In smaller buildings, and those with reasonable spans, the floor construction can generally be designed in wood, with little recourse to use of iron and steel, except for bolts and hangers and a few

girders. But to do this economically and well demands that consideration be given to construction from the very outset. Main partitions should be kept as nearly as possible over one another, and heavy loads at the centers of spans should be avoided. In frame construction, the writer advocates the omission of the customary heavy wood wall sills under the first floor joists and recommends the "western" method. In this method the joists rest directly on the masonry walls, and double joists at right angles are spiked to them. Where parallel to the walls, they are also doubled, thus making a double row of joists all around the building. Then the rough floor boards are continued clear to the outside, and a light sill of 2-inch material, the width of the studding, is spiked on top of them. This is to receive the bottom of the wall studding. All interior partitions rest on similar 2-inch sills on top of the rough floor, so that there is always a uniform shrinkage everywhere. This construction assumes that the inner ends of the joists rest on either masonry or light steel beams. The

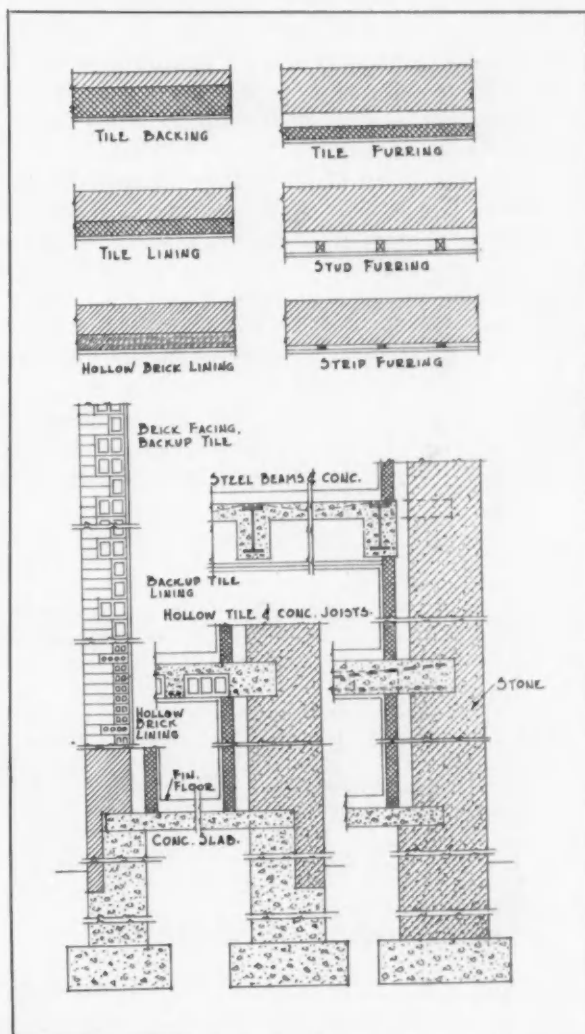


Diagram Showing Various Types of Masonry Wall Construction. Brick Facing is Shown with Various Types of Backing and Furring. Several Floor Types are Also Shown



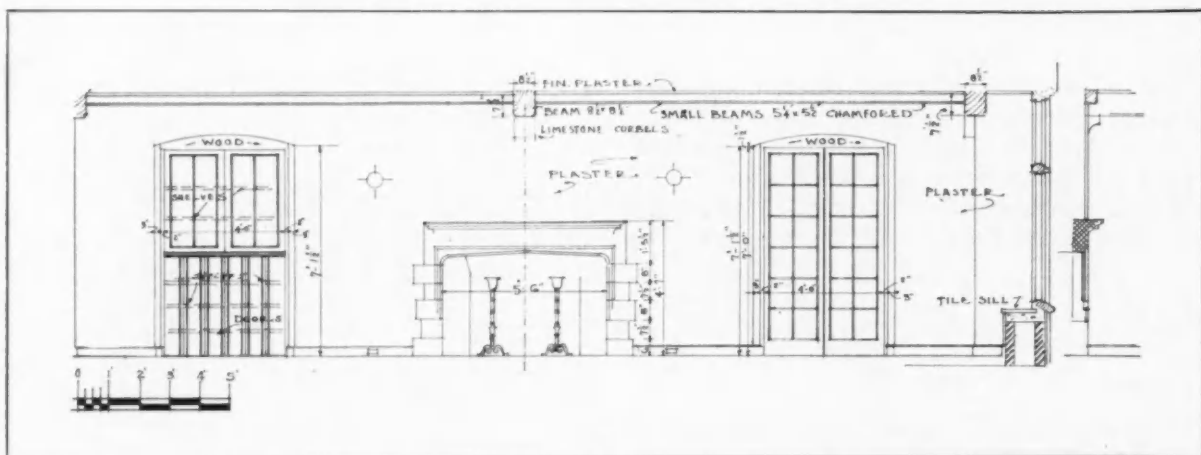
Women's Dining Room,  
Oakland Golf Club, Bay-  
side, Long Island, N. Y.  
Roger H. Bullard, Arch.

spaces between the joists over the foundation should be beam-filled with lean concrete or brick to act both as a fire stop and a protection against cold floors. Such a floor, with the addition of a layer of incombustible paper over the rough boards and a plastered ceiling below, furnishes a very efficient fire stop.

Do not skimp on sizes of floor beams. Using larger size beams or a closer spacing is often invaluable as a protection against cracked plaster, and the extra cost involved is small. Use plenty of good stout cross bridging, and tie or lap joists wherever possible.

In fireproof buildings, reinforced concrete, in some form, is probably the best material for floors. For the main floor this may well be of the all-reinforced concrete girder, beam and slab type. Sometimes, however, and especially on

upper floors, it is simpler to employ steel for girders and beams and to confine the use of concrete to the slabs. Ease and speed in erection and limiting dimensions for beams will largely decide this, or it may be that a local preference for one type or another will have more weight. Some prefer thin, short span slabs, using a suspended ceiling below the beams. This gives space for running pipes, etc., but it requires closer spacing of beams than some others. The hollow tile and concrete joist method is well adapted to quite long spans and gives a flat surface on which to plaster. It is a more nearly soundproof floor than one with a suspended ceiling, but more troublesome as regards the handling of plumbing pipes. The so-called "tin pan" construction is practically like the tile and joist, but with the substitution of voids for tile. It requires a sus-



Working Drawing of Dining Room Shown at Top of Page

Corner of the Lounge,  
Oakland Golf Club,  
Bayside, Long Island, N.Y.  
Roger H. Bullard, Arch.



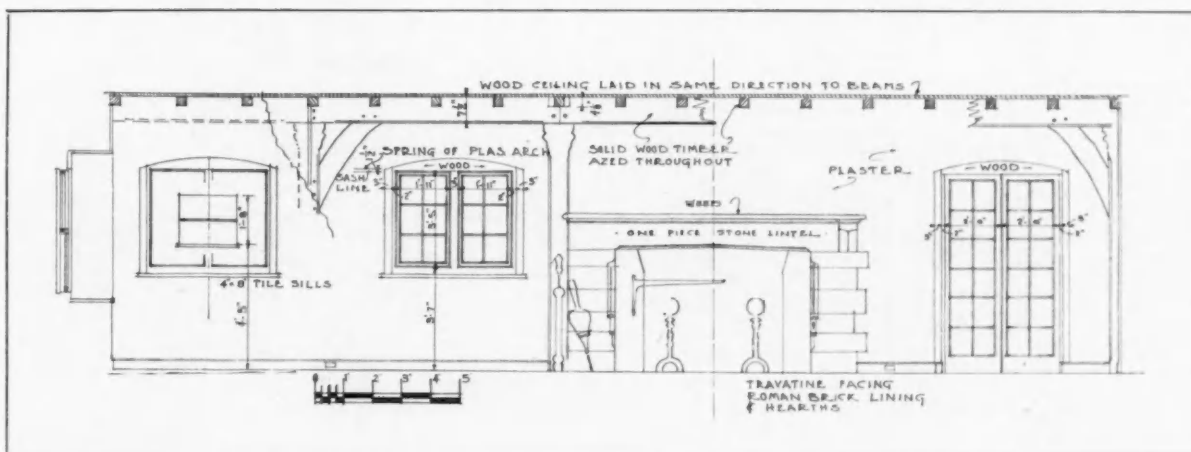
pended ceiling. There are on the market numerous light I-beams or skeleton trussed beams, which can be used with a fairly close spacing and a light reinforced slab above and a suspended ceiling below. Some of these are excellent.

For finishing fireproof floors with wood, old fashioned sleepers set in concrete are good. Clips for the sleepers may be set in the concrete also, with or without fill. Another satisfactory method is to cover the fireproof construction with 2 inches of nailing concrete and lay the finished wood floor upon it without sleepers.

Where floors must span wide areas, without girders or beams projecting below the ceiling, building them is often quite a problem. If the thickness of the floor is sufficient, heavy steel girder beams may sometimes be used. But cases constantly arise where this is impossible, and it is

seldom possible to use a beam or girder which projects above the floor. However, if the story above is cut up into smaller rooms, or especially if there is a corridor running down the center of the span, it is generally possible to arrange some sort of a truss or system of hangers to take care of the loads. For example, the cross partitions above can be spaced at suitable intervals, and trusses, either wood or steel, built into them. The lower chord will be within the thickness of the floor to be supported, and the upper chord in or just below the floor above. The web members will be so disposed as to allow for a central corridor or any communicating doors.

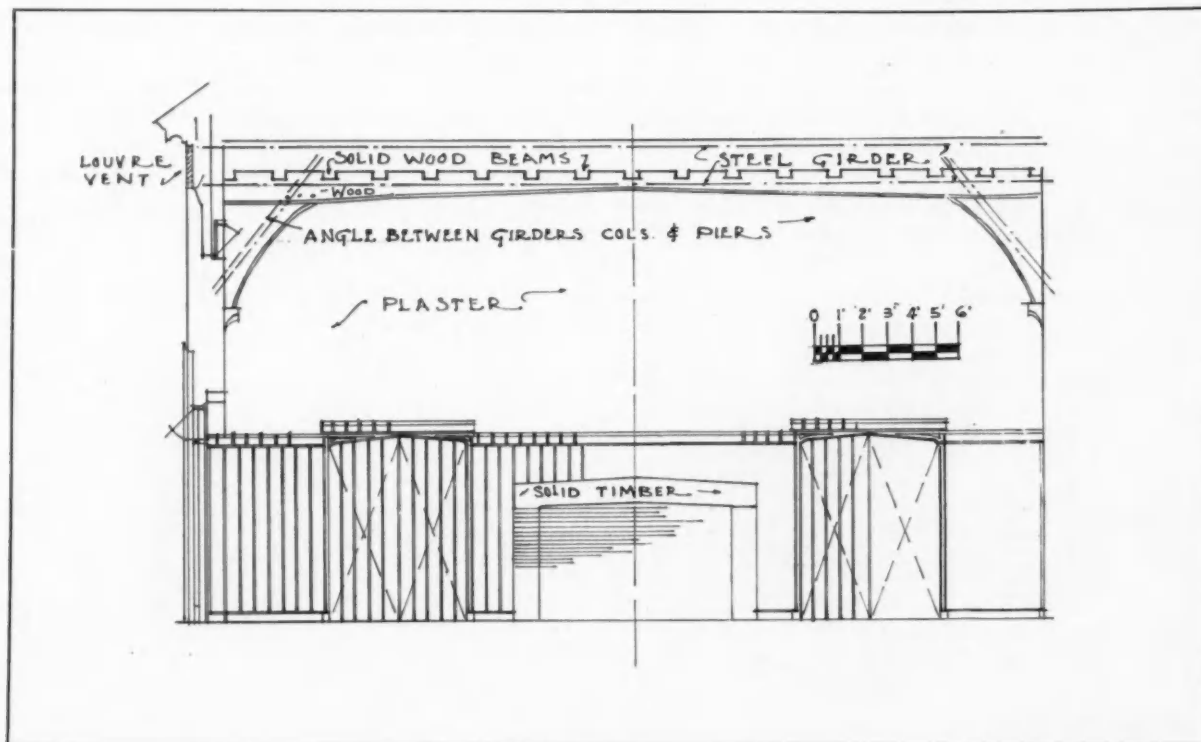
Cases may arise where a trussed partition in the story above will not allow the necessary doors or openings through it. In such instances it may be feasible to suspend flush girders by means of



Working Drawing of Lounge Shown at Top of Page



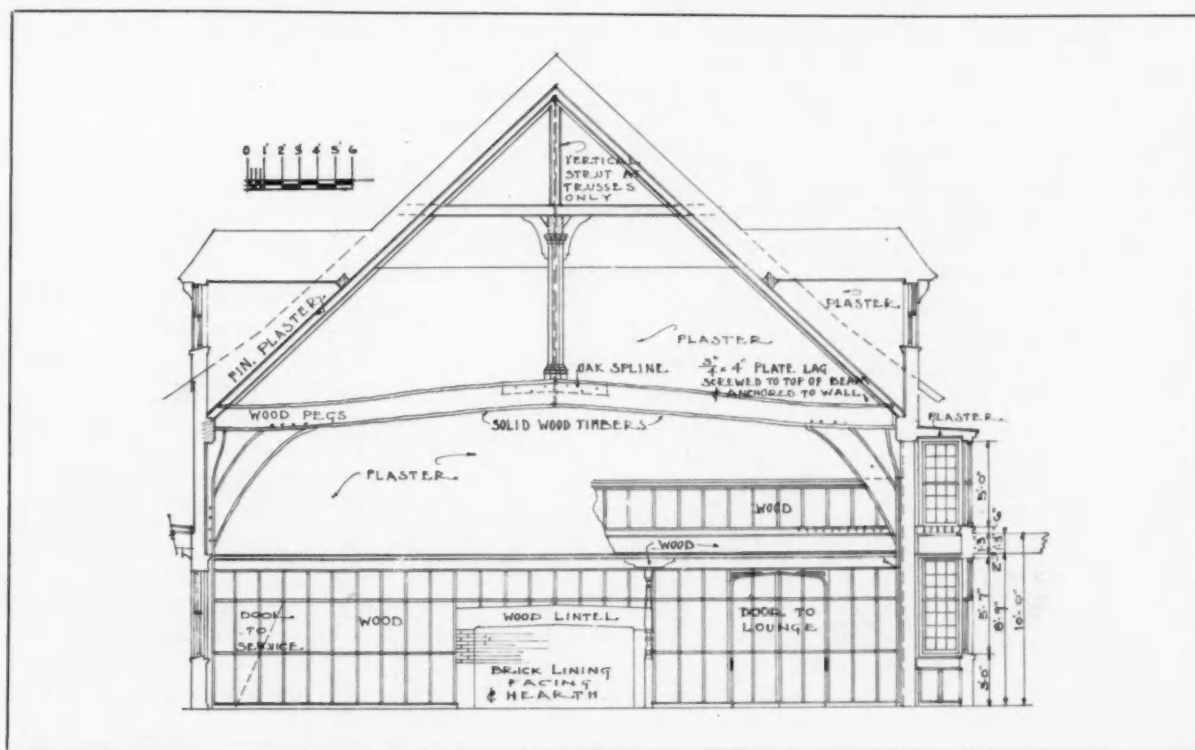
Main Dining Room  
Plainfield Country Club,  
Plainfield, New Jersey.  
Roger H. Bullard, Arch.



Working Drawing of the Main Dining Room, Plainfield Country Club



View of the Great Hall,  
The Maidstone Club,  
East Hampton, N. Y.  
Roger H. Bullard, Arch.



Working Drawing of the Great Hall, the Maidstone Club

steel rods from a truss or girder in the roof space or attic. These hangers, being vertical, will allow the maximum space for intercommunicating openings. Such devices as these, while of perfectly proper construction, are somewhat complicated and costly, and should not be resorted to unless absolutely necessary. They involve heavy concentrated loads, which must be provided for by piers, posts or columns.

**ROOFS.** Shingle, slate or tile are the roof coverings which seem most appropriate for a club house. Slate or tile should be used if possible. In the majority of cases the roof construction will be of wood. That being so, it is very desirable to insulate against heat and cold. Cover the tops of all rafters with  $\frac{1}{2}$ -inch fiber insulating board before applying the roof boards, and whether the covering be of slate or of wood shingles, use tight boarding,—not shingle lath,—and roofing felt or good waterproof paper over this boarding. Do not be afraid that the shingles will rot out at once; they will not, and it will save many a leak and many a ton of coal. All flashings should be of non-corrosive metal.

If a more fireproof roof is required, a very good arrangement is to use channel or I-beams as rafters, with light angle or T-purlins, spaced not over 4 feet apart. On these purlins lay a thin slab of nailing concrete reinforced with heavy rib lath. The under side of this slab should be plastered with cement mortar. Such a roof gives a good surface for applying slate or tile and is a fairly good insulator. Various forms of pre-cast roofing slabs can be successfully used.

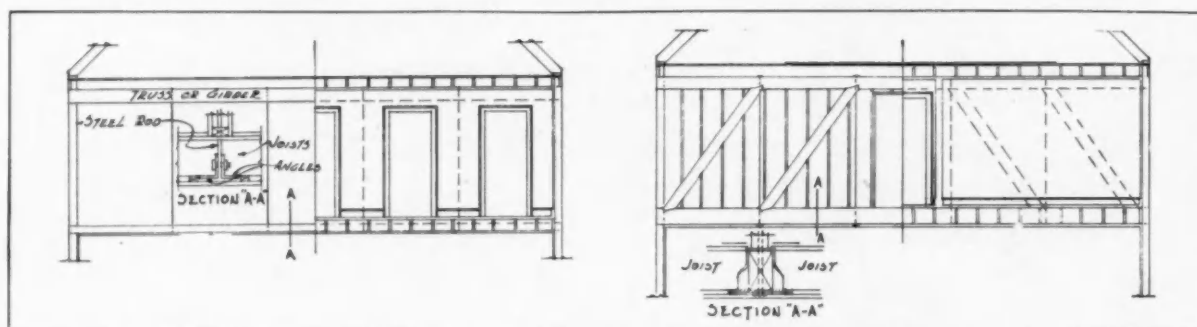
**OPEN TIMBER ROOFS.** Wherever possible, plan the construction of open timber roofs from the beginning so that they will be structural. Unless the roof must be fireproof, this can generally be done at a saving in cost and with better results. It seems absurd to build a good solid structural wooden roof and then afterwards hang up under it a purely imitation truss. Trusses for open roofs may be very simple or very elaborate. There are the "A" truss with its low tie beam, the scissors truss, the ham-

mer-beam truss, etc., with all their variations. Some require one purlin, some many. They afford great opportunity for combining engineering skill and practical knowledge with artistic design.

**INSULATION.** The writer wishes to emphasize again the importance of using good insulation. In the northwestern states this is generally recognized and accepted. But the east is far behind in this respect and can well profit by the experience of others. There is no "best" insulation for all conditions, but there are many which are excellent for each problem. The different types all have their proper places and uses. Much discomfort can be avoided and an appreciable saving of fuel can certainly be effected by their judicious use. While perhaps not so important as keeping out cold in winter, good insulation will also keep out heat from the direct rays of the sun in summer. In addition, the use of sound insulation between rooms and between floors deserves careful consideration, as well as the deafening of plumbing pipes.

And, last of all, try to eliminate fire hazard. Look to the chimneys, and see that all flues and fireplaces have sufficient thicknesses of good brick work around them. This is especially necessary at the back of a fireplace and over the lintel at the front of the smoke chamber. Many a chimney has a good flue lining and plenty of masonry around it, but is dangerously thin at the smoke chamber, below where the lining starts. Keep all wood work away from chimneys. Fire stops are well worth considering and introducing at critical points. See that all stairs are strongly built and not too steep, and that there are no winders.

While the general planning of a club house, for convenience of arrangement and ease of operation, requires more or less specialized training and experience, the planning of its construction comes down to good common sense and substantial, practical building. The fact that it is a club house does not greatly alter the problem. There are generally several methods of solution; which will be adopted depends largely on location, personal preference and the state of finances.



Two Methods of Supporting a Second Story Over a Long Span

## FINANCING THE GOLF CLUB

BY

INNES BROWN

MANAGING EDITOR, *THE AMERICAN GOLFER*

THE impression is rather commonly prevalent that golf clubs, generally speaking, are always in debt, and unfortunately there are good and sufficient grounds for such an impression, because golf, in its business aspect, still has some way to go before working itself clear of a haze of confusion and disorder in matters pertaining to club finances. All too frequently, the trouble originates in the basic plan of financing and suffers aggravation from mismanagement and ill-advised administration later on.

There are two general plans of providing the funds necessary for the organization and building up of golf clubs. The one, and by far the most common one, finds a kind of loosely knit alliance among a few individuals who set out on their venture with little or no definite conception of just what is going to be needed or of how the needs are to met. The other is a business-like procedure of working out in advance a general plan to cover all operations and the underwriting in some form of the entire proposition. Suppose we examine the two briefly.

The great development in golf in this country over the past ten or fifteen years has come largely in the development of what may be called community clubs; not in the sense that they are community owned, but rather that they aim at providing recreational and social facilities for people living, in large part, in the immediate community. The usual procedure is something like this. A small group of individuals, fired by enthusiasm for golf, conceive the idea that the city or town needs a golf course, or another course in case it already has one or more. They decide to conduct a quiet personal canvass among their friends in quest of other kindred spirits. Some encouragement is met with, and they decide to go ahead and organize a club. Suitable land sites are considered, and usually an option is taken on one or more. Announcement is then made public of the formation of the new club, and the gallant crew launches into the task ahead. Costs are figured roughly, after which a sliding scale of fees for club memberships is worked out, the costs advancing as successive goals in the campaign to secure members are reached. If the allotted number of new members can be secured in each successive stage on scheduled time, all goes well,—but that is an exceedingly large "if."

Grief encountered usually derives from the fact that the entire work is done in an amateur

way from the start. Work is undertaken through organization of committees. The pioneers of the movement are as a rule business and professional men, active in their own spheres, which occupy their time rather fully,—so fully, in fact, that they do not have the time available for the club work, except at a considerable sacrifice of their own private interests. This club organization work is a business in itself, with the details of which they are unfamiliar. This unfamiliarity makes for waste and inefficiency, and costs mount up rapidly. Evidence of the failure of the enterprise to make the expected headway shakes the faith of prospective members, who warily decide that they will wait a while longer and see whether the venture is actually going to succeed before they come in. Failure to maintain the expected schedule of obtaining new members, and through them necessary additional funds, throws a wrench into the machinery, and the craft begins to ship water.

The most ready recourse in such circumstances is to plaster an assessment on the members already in, as an emergency measure labeled as the only remedy to save what has already been put in. In rare cases, there may be a few who are able and willing to save the situation by advancing the necessary funds on such security as the club and other members can guarantee. This is a happy solution, but hardly to be counted on generally. And even so, it does not permanently relieve a bad situation. The obligation still exists, and in the meantime the financial condition which has developed makes more difficult the already hard task of rounding up the necessary members to carry on.

The second method differs from the first in the main essential that it works from a different angle. Here the plan is to build a course and club house first, and then organize the club. In the first instance, the procedure was to organize a golf club and then build a course and club house, or at any rate to try to carry on the two operations simultaneously. There are at least two main advantages in the second method, for, with funds available to carry through all operations, it is much simpler to organize the work properly and to have it done on an economical basis. The construction of both course and club house is carried through in full in proper time, and not piecemeal, which would mean delay and extra costs. The second important advantage is that the prospective member is offered a complete



picture ready for his inspection and not a blank canvas on which the artists attempt to describe the picture they are going to paint. Not only can the prospect see exactly what the course and club house are, but there is the still further advantage that, if he joins, he has the facilities ready for his immediate enjoyment and will not have a wait of a year or more before him.

The case of the Druid Hills Golf Club, of Atlanta, aptly illustrates the point. Several years ago a real estate company in that city acquired a large amount of acreage in what is now known as the Druid Hills section. The late George Adair, one of the pioneers of golf in that section of the country, was a member of the firm. With a ready appreciation of what an asset a good golf club would prove, the first thing he did was to go out and build a fine course and a handsome club house. The entire expense was borne by the developing firm, and everything was in readiness for occupancy and play before any one was approached on the subject of taking a membership. Invitations were extended to a select list of golfers to become members, and the task of filling the membership list proved easy. Within something like two years the list was full, with others waiting to come in. A gradually increasing scale of prices prevailed, and, by the time the list was filled, sufficient funds were provided for financing a plan to take the property over in the name of the club. The full purchase price was not paid outright, but dues were fixed at a figure which allowed for the creation of a sinking fund, which in due time paid off the remaining obligations on the property. In the meantime the investment of each member was amply protected by the value of the property.

Numerous other instances might be cited of formation of clubs in the vicinities of the larger cities. However, thus far, practically all cases which have come to the attention of the writer have reflected the spirit or the vision of one or more individuals, who have had at least a sporting interest in golf as a game. At the same time, purely from a business standpoint, the matter of financing the organization of a golf club in a logical location is in fact entirely sound. Ownership of the land site affords ample security to individuals or corporations in financing the building of a club and course, since the operation constitutes improvement of the property quite as much as would the building of a residence, a store or a factory. And furthermore, the location of the club readily and promptly insures an increase in nearby land values.

Shortly after the war a prominent citizen of Nashville purchased a large tract of land southwest of the city, formerly a famous stock farm, and proposed to the Nashville Golf and Country

Club, whose quarters were becoming cramped because of encroaching building operations, that he would give the club 150 acres of land, if the members would move out and build a new course and club house. The club accepted, and within a few years after the new club was built, a considerable number of handsome residences were built quite close by and, what is more, two modern apartment houses have also been built there.

Whether the necessary funds be secured by a form of underwriting or by the more laborious process of relying on the sale of new memberships, clubs which own or aim to own their property usually make the purchase of a share of stock in the property a condition for obtaining membership. As a rule, the purchase of such stock makes the member a joint owner in equal division with every other member of the club. In most states the corporation laws make it advisable to organize two corporations, the one a social club, the other a business corporation. Usually the board of governors of the one and the directors of the other are the same. The purpose of this procedure is to avoid court complications in amending or otherwise changing the regulations and by-laws of the social club.

Incidental to the problem of club financing, it may be remarked that the work of securing members in the club is most important, since it is the members in the final analysis who put up the money for the club. Volunteer campaigns are rarely successful. The work must be done in an organized manner, which can hardly be the case with a volunteer organization. Experience in raising funds for various charities, public services, college endowments and the like has demonstrated the business soundness of turning this kind of work over to specialists in this line. Thus far, within the writer's knowledge, there is no organization devoting its effort to the field of golf club work. However, other fields are well represented, and there should be no radical difference between them and golf club work. A commission basis is usually established with a maximum percentage allowed. In the case of a golf club the problem of eligibility would obviously enter.

Again, while a golf club is a social and recreational center in purpose, in its organization and administration it is a business enterprise. Its capital is the money paid in by its stockholders, and the nature of the business is such that it cannot operate in a small way. It is a matter of unit construction, and that construction depends on bringing in a requisite number of stockholders within a limited time. The plan which shortens the time necessary to sell the proposition to this requisite number will prove most economical in organizing and developing the club.



# THE CORRELATION OF CLUB HOUSE AND GOLF COURSE

BY  
CHARLES H. BANKS  
GOLF ARCHITECT

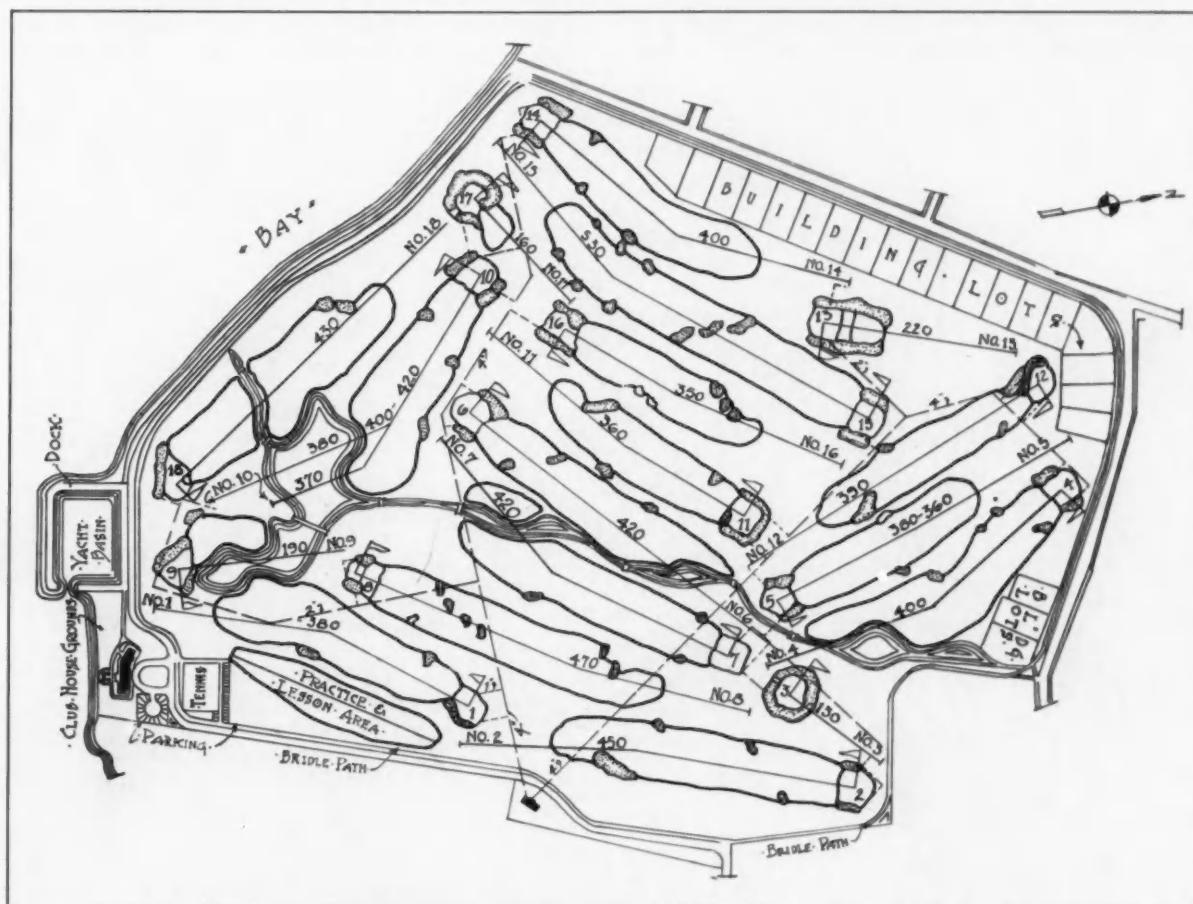
**D**RAWING up plans for a country club involves so many different factors that any hasty or haphazard work on any one detail may lead to difficulties and embarrassments which it will be impossible to surmount. From the very outset there should be coöperation between the golf architect and the club house architect, and the different committees should work in close harmony with both these men in order to secure the best results. If a landscape architect is to be employed, he too should have a voice in the early conferences. Naturally, there will be differences of opinion, but the final results will certainly be better if these differences are ironed out before the work has proceeded to the point where changes will be costly or impossible.

To begin with, it may be assumed that the club house committee will wish to choose as outstanding a location as possible for the club house. Not

infrequently this will be the highest point of land on the property. Sometimes it will be a corner or some other part of the property that is limited in access from the standpoint of golf layout. As a result of using arbitrary methods, the club house committee may leave the golf architect in a critical position from which it will be impossible for him to extricate himself. The golf architect will have no alternative but to make the best of a bad situation, and will thereby subject himself to unintelligent criticism from those who do not realize the limitations that have been placed upon him by others.

**ESSENTIAL RELATIONS.** The principal things which the golf architect must consider in the relation of golf layout to club house location are:

- (1) The possibility of getting away conveniently from the club house to the tees of the first and tenth holes.



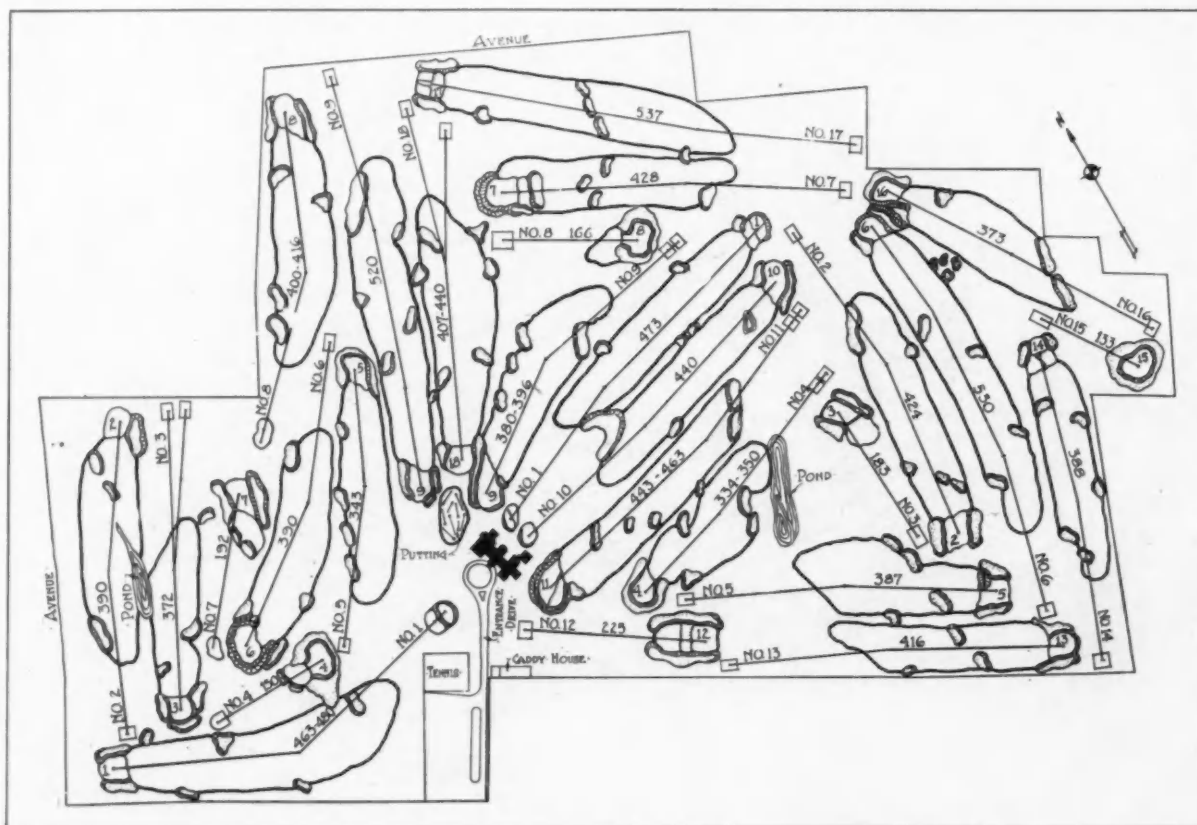
Plan of Golf Course, Westhampton Country Club, Westhampton Beach, N. Y.

- (2) The possibility of getting back conveniently to the club house from the ninth and 18th holes.
- (3) Avoiding steep grades, especially toward the end of the round.
- (4) Provision for a practice fairway adjacent to the club house.

When one considers that in addition to this provision must be made for a suitable entrance road, parking space, caddie house and yard, and sometimes tennis courts, swimming pool and other features, it becomes clear that the location of the club house and the utilization of the surrounding land affect many things other than merely the view from the lounge windows, or some other feature which in itself may seem highly important, but which in some cases may be only a minor part of the picture. A good club house architect will, for example, endeavor to arrange the club house so that the first tee, and if possible the tenth also, will be near the locker room and professional's shop, and so that the lounge, grill, and porches will command suitable outlooks. But the club house architect has many problems to consider. All is not clear sailing for him. So the golf architect should endeavor as far as possible to assist in working out those problems which concern a well unified plan of club house and course layout combined.

**CLUB HOUSE LOCATION.** The entrance to the club premises must, of course, be given very careful thought. It should be planned with the idea of giving an effective approach, from the architect's standpoint, over an easy grade, with ample room to avoid danger, and with easy access to the parking space. But in some instances the topography surrounding the club house permits of only very special treatment, and it may be that considerable grading will be required to secure the desired results. The same is true of the parking space. In such instances it is better, of course, to take the bull by the horns and draw up a plan at the outset which will permit artistic and practical treatment of the problems, rather than resort to halfway measures which will later cause many a regret because of imperfections which it will be costly or impossible to correct. In all problems the golf architect must be given full consideration. For the sake of safety and "playability," ample room must be allowed for those holes which adjoin the club house.

There is nothing much more discouraging to a golf architect than to be handed a set plan which so limits his scope as to greatly weaken the effectiveness of his layout, when he realizes that had he been called in early enough to advise as to his own needs for the course, all problems might have been worked out satisfactorily. This sort of



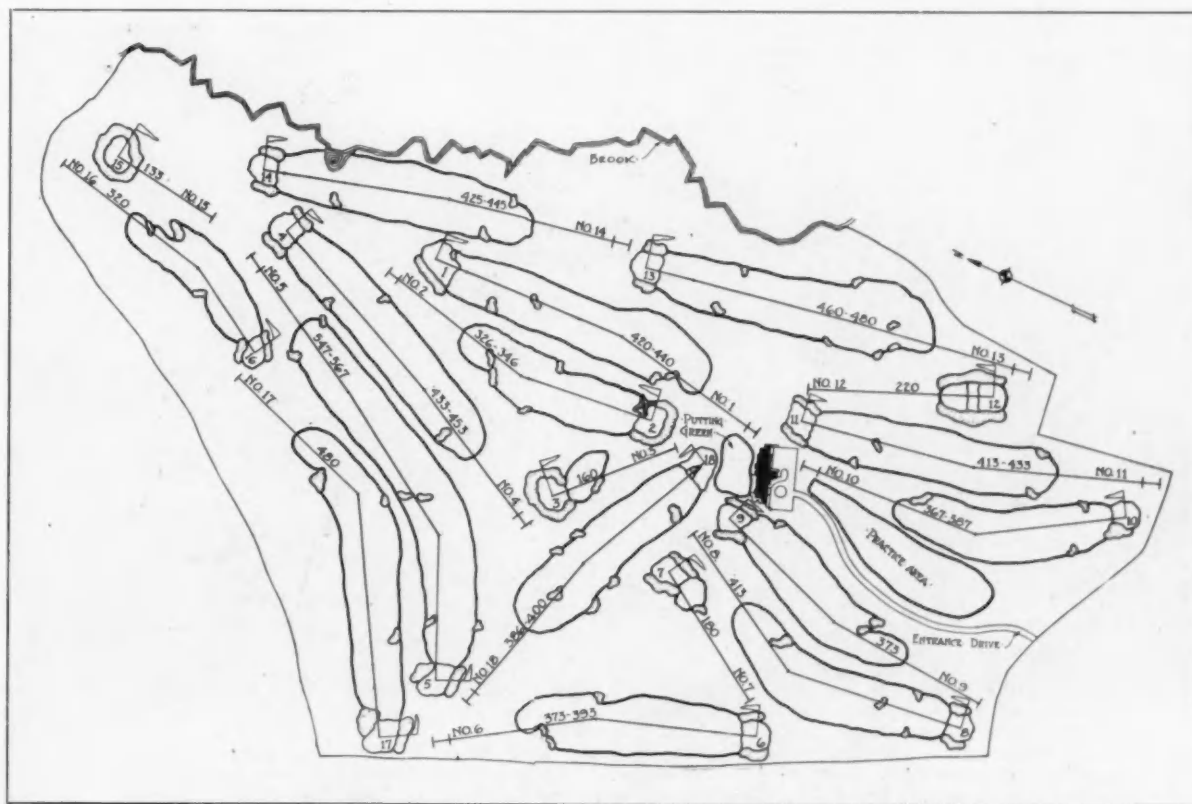
Plan of Golf Course, Hackensack Golf Club, Oradell, N. J.

dilemma faces the golf architect not infrequently in cases where real estate developments are involved. The writer has in several instances been handed topographical maps showing roads and plotting all carefully planned in advance of any study of the property for golf course purposes. Obviously, the best results can be secured only when all of the problems are considered in their relation to one another. Roads can be laid out more easily than golf holes because they require less room and less exacting conditions, and sometimes excellent golf holes can be built on land that is not suitable for building lots, thereby reclaiming poor land, and at the same time releasing an equal acreage for building purposes.

**COMPARATIVE METHODS.** One comparison will serve to illustrate the right and the wrong method. A few years ago a golf course was planned in connection with a real estate development. In this case it happened that the building of the course was to be financed by a hotel, and the property was furnished by an outside interest. A local golfer was asked to determine what was required for the golf course. Then a complete layout of roads and building lots was made, and the real estate company proceeded to build roads, lay water mains and make other improvements, and at the same time to make contracts for the sale of the property. Finally, when the golf architect was

called in, he found that the property which had been allotted for golf course purposes was entirely inadequate, and it was only with the utmost difficulty and by persuading the real estate company to slice off many of its building lots, at the cost of much trouble and delay, that a reasonably good golf layout could be secured.

**SUCCESSFUL COÖPERATION.** How different this method is from that employed by a well known expert who has had great success in the promotion of high class real estate developments! This man employs a golf architect, a club house architect, a landscape architect, and a hydraulic engineer. All of these men first make a very careful study of their individual problems. Then they are called together in conference. After a give-and-take discussion they go back to the study of their particular problems in the light of facts brought out in the conference. This process is sometimes repeated many times, especially between the golf architect and the landscape architect, who has charge of the layout of roads and building lots, before a final, well unified plan is formed. When work is started, it proceeds in accordance with perfected plans which have been made with the utmost care and consideration of every possible contingency. The result of such coöperative methods will inevitably be as free from error as it is possible to make it.



Plan of Golf Course, Tamarack Country Club, Port Chester, N. Y.





The 16th Hole at the Whippoorwill Golf Club, Near Chappaqua, N. Y., Looking Back Toward the Tee, Which is Located on the Rise of Ground in the Distance. This Land Was so Swampy That Clearing Had to be Done While the Ground Was Frozen. Trees Were Pulled by Cables Run in from a Distance. The Land Was Too Uncertain to Risk Running Tractors on it. Later, an Artificial Pond Appeared Where This Swamp is



The 15th Green at the Whippoorwill Golf Club, Near Chappaqua, N. Y., Under Construction. This Illustration Shows the Condition of the Land After the Clearing of Trees Had Been Completed, a Large Amount of Ledge and Coarse Rock Removed and Drainage Lines Installed. An Open Ditch for One of the Drainage Lines Appears in the Foreground. Owing to the Rocky Condition, Most of the Soil for the Green Had to be Carted in. The Beginning of the 16th Hole Appears in the Background, the Tee Being Behind the Knoll. An Artificial Pond May Be Seen Behind the Truck on the Left





The 16th Hole at the Whippoorwill Golf Club, Near Chappaqua, N. Y., Looking Back Toward the Tee, Which Appears Under Construction on the Elevation. The Artificial Pond Replaces the Tangled Swamp Shown in the Accompanying View. The Material Taken from the Swamp Was Used for Fill Where the Good Land Appears Adjoining the Pond. This Land, Which a Year Ago Was Useless, Has Thus Been Reclaimed and Beautified and Put to a Useful Purpose



The 18th Hole at the Knollwood Golf Club, Near White Plains, N. Y., Taken from the 200-Yard Mark. The Fairway in the Foreground Was Swampy and Required an Extensive Drainage System. The Fairway Across the Pond, in Front of the Green, Was a Steep, Unplayable Slope Which Had to be Graded by Making a Cut on the Right and a Fill on the Left. The Green Itself is on a Location Formerly Occupied by a Rubbish Heap and an Old Greenhouse Foundation. The Construction Was Heavy, but the Hole Appears Natural

**TYPICAL PLANS.** The accompanying sketches of golf layouts will serve to illustrate some of the points mentioned here, but obviously each project has its own peculiarities and must be treated with reference to its individual problems. The plan of the new Hackensack Golf Club has as its club house location the highest point on the property. The plans called for a 27-hole layout, making it advisable, if possible, to have three starting tees and three finishing greens near the club house. The ground on the west of the club house slopes away very abruptly. The ground on the east also slopes away abruptly, but it flattens out quickly. The boundary line near the club house on the south, and the location of the entrance driveway, parking space, and caddy house eliminate this land from use for golf purposes. A deep ravine toward the east,—less than 300 yards distant from the club house,—eliminated quite a large plot of land in this section from use for first class starting and finishing holes. Therefore, the land available for the three starting tees and the three finishing greens was much curtailed. The plan, however, worked out very well, with no bad features, and with an additional tee (Number 12) adjoining the club house. In this case the property was too limited for a practice fairway, but this is not so bad, considering that there are 27 holes in the layout.

It may well be added here that having the ninth green and the tenth tee near the club house is sometimes undesirable and sometimes impossible. This feature of the layout should not be forced when the conditions are not favorable. Some of the finest golf courses in the world, such as the famous St. Andrews in Scotland and the magnificent Mid Ocean in Bermuda, do not include this feature. A course which the writer built in New Jersey in recent years has as a club house location a corner in a narrow strip of land between a lake and the boundary line. There was no denying the fact that this was the outstanding location for the club house, and so the golf architect set to work to make the best of the situation. By careful and persistent study he arranged to have the first tee and the 18th green adjoining the club house, and brought the eighth green back near the 18th tee, so that a nine-hole round may be completed at the club house by playing the first eight holes and Number 18. Instances of solving similar problems might be multiplied without number.

The plan of the Tamarack Country Club has a fairly central point,—not the highest point of land,—as its club house location. In this case,

when the golf architect was called in for consultation with the club house committee, a point a considerable distance to the south of the final location had tentatively been selected by the committee. The club house architect also suggested for consideration a plot adjoining the highway. The golf architect, with his visualization of the problems and features of the layout as related to club house location, suggested the location as shown on the map. There were two main reasons for this: (1) It commands a striking view of almost the entire course, whereas the point originally selected by the committee was so far back from the break in the hill that from this point the view of the course would be very limited. (2) It permits of a far better utilization of the property for golf layout purposes, leaving between the club house and the highway an uninterrupted stretch of sufficient extent to permit of laying out some excellent holes and a practice fairway on the top of the hill.

The plan of the new course constructed in 1929 for the Westhampton Country Club shows as its club house location a corner of the property hemmed in by a pond. This pond, however, is small enough to act as an excellent hazard, and therefore does not introduce any difficult problems. It acts, rather, as an attractive feature. The land was largely marsh, and very extensive sand filling was necessary in order to make the land usable. In this case there was no topography. It is a *made* course from the water up, as one might say. Starting and finishing holes and practice fairway work out well in relation to the club house location, although the latter is in a corner and at the water's edge. Here there is an entrance road, approaching the club house from two directions, and provision has been made for parking space, tennis courts, and yachting features, with ample space left for additional parking facilities. The layout is ideal. The lagoon, built for drainage purposes, introduces interesting golf shots and an attractive landscape feature.

Owing to the more or less unique problems which must be considered, both in the planning of the club house itself and also in the proper coördination of the club house plans with the golf course plans, it is certainly advisable to employ an architect who has had experience in this particular branch of his profession. In addition to being thoroughly familiar with the numerous problems of his own particular work, he will readily grasp the problems which the golf course architect must face and will, therefore, be better equipped to cooperate in securing the best all-around results.

# ROADWAYS AND PARKING SPACES

BY

A. F. BRINCKERHOFF  
LANDSCAPE ARCHITECT

THE roadways on the grounds of the golf and country club have an important function in addition to providing a safe and convenient route for transportation,—they should be attractive and inviting. The impressions created by the approach to a place do have an appreciable influence on the subsequent experiences and emotions. Perhaps the importance of an attractive approach to a club house is not fully appreciated, being dwarfed by other and more conspicuous elements of the ensemble. Nothing, however, can be entirely satisfactory if the subtle and indefinable sources of pleasurable emotions are wanting. These sources must comprehend the element of beauty.

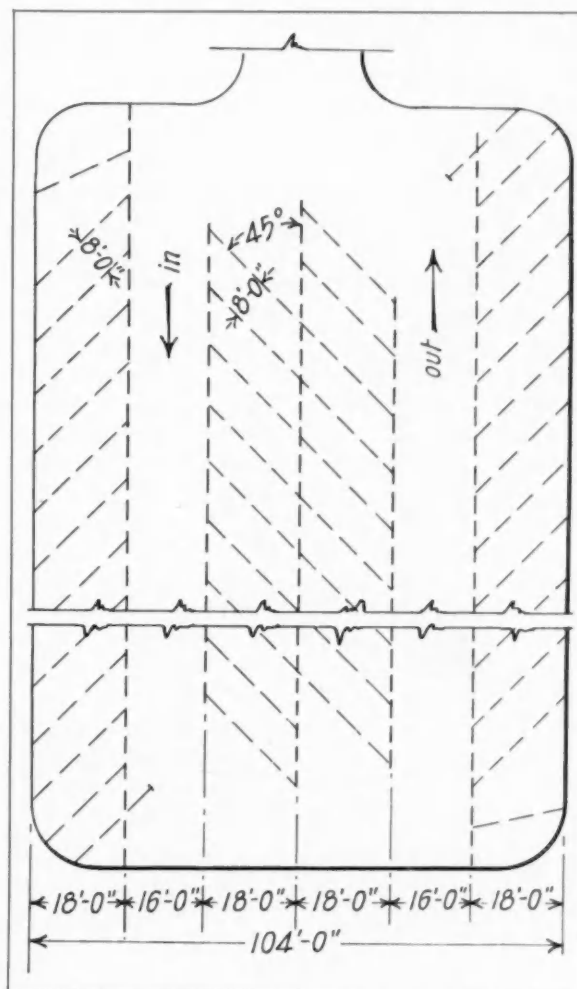
The relative importance and true conception of the various factors that constitute a golf or country club cannot be appraised and attained except by the joint consideration of the building and grounds committee and the building, golf course and landscape architects. These three contribute to and control the physical appearance of the grounds, and it is only the best correlation of their functions that produces the closest possible approach to perfection. Even if the initial funds available for the development of the project are not sufficient for the completion of the landscape features concurrently with the others, complete landscape designs should be made in the first instance and the planning completed as far as possible. If this precaution is neglected, a satisfactory landscape development cannot be had.

The reconstruction of the grounds, and in some instances of the club houses, of a large number of fairly old clubs at this time demonstrates the wisdom of having *complete* plans made before the development begins. The conditions imposed on these architects,—building, golf course and landscape,—in connection with these projects are most difficult, and the approach to perfection is too frequently handicapped by the lack of foresight in the initial undertaking.

ROADWAYS are primarily routes for transportation through the grounds to the club house. They must be safe and convenient. The factors involved are capacity, location, width, gradient, curves, road construction and drainage.

Location. Topography is the controlling factor in locating the roadway. On fairly level ground the most direct route between the entrance to the grounds and the club house is the least costly to construct, and the amount of the roadway

budget item will be the limiting condition in departures therefrom. If the topography of the ground is broken by steep elevations, it may be less costly to locate the road in an indirect route, so as to avoid expensive and unsightly cuts and fills and to avoid also an excessive gradient. The indirect route will reach its objective by maintaining the desired gradient by following the natural contour of the ground. The indirect route is often the more attractive, because it is susceptible of a better and more natural disposal of trees and shrubs and it affords possibilities of creating interesting vistas. The direct route can be made attractive and interesting by skillful planting and adornment by small constructions, such as wall fountains and niches, permanent stone seats, or statuary. Such a road tends to be



Parking Space. Continuous Traffic, with Head-on and Back-out Placement of Vehicles



more formal than the indirect route. Deep cuts and fills are always unsightly, because they are a violation of the natural contour of the ground. The high fill is always a potential danger to traffic. The most important factor in locating the club house is to secure its proper relation to the golf course, and the roadways are the secondary consideration, but both must be considered jointly in locating the best route for the roadways.

**Width.** The width of roadways is determined by traffic requirements. Ample width for opposite lines of traffic must be provided in order to reduce or eliminate the element of danger. Increased width, carefully designed easements, banking of the roadbed and long radii must be provided at curves. Also, clear visibility of approaching traffic from the opposite direction must be maintained both day and night. The volume of traffic on golf and country club roadways is not constant, but it is subject to very heavy peak loads, and the safe road is the road that is built for the maximum peak load of traffic. There is a constant tendency toward building wider roads as the result of increased experience with motor vehicle transportation. Width, however, has a direct relation to the cost of construction. This phase of the designing must be given very careful study, because width is one of the most important elements of safe traffic.

**Gradient.** The safe gradient is determined largely by the kind of roadbed construction and the character of its surface and by the climate, the presence of ice and snow. The comparatively straight road can be used safely, even with quite a steep gradient, but the curve and its approaches require a more nearly level roadbed. In climates free from ice and snow, the coefficient of tractional resistance of the various kinds of roadbed surfaces has a direct influence on the allowable maximum gradient. The presence of ice and snow reduces the permissible gradient regardless of the character of the roadbed surface. Standard gradients cannot be set up because of the great diversity of contributing factors. They are correctly determined as a result of observation, research and experience.

Curves are the most dangerous sections of roadways and the most difficult to design. The relation between topography and direction of route is extremely variable, except on flat grounds. Topography generally controls the direction of the route as noted in the discussion of location. The elimination of danger is the first consideration, and to attain this entails an expense that cannot be avoided. Liberal allowances must be made for constructing curves having the radius required for motor vehicles, so that reasonably rapid locomotion is free from disturbing

sensations and danger to those who use them.

Long easements on both approaches to the curve lead into a very materially widened roadway, so as to provide ample clearance between the vehicles moving in opposite directions. Cut-out patterns of motor vehicles, drawn to scale, placed on the map, will permit the necessary clearances to be measured, to which very liberal additions must be made to allow for the momentum of the vehicles and the idiosyncracies of the drivers. The approaches to the curve must be banked on the outer portions, increasing in pitch as they approach the curve, where the pitch or banking is increased materially with maximum pitch at the center line of the curve. The safe curve will vary with the gradient of the roadway, the minimum radius of the curve, the allowable speed of traffic, the type of roadbed construction, and the climate. For this reason it is inexpedient to establish standards of design.

**ROAD CONSTRUCTION.** It is generally desirable to use local materials for road construction, as they are more economical in cost and more suitable for the purpose. The roadbed consists of three parts: first, the foundation, made usually of coarse broken stone or gravel; second, a layer of finer material, placed over the foundation, the interstices of which are filled with some form of asphalt product to serve as a binder and prevent the infiltration of water; and, finally, a thin top dressing of fine material, which is rolled into the material below. The top dressing is sometimes selected for its color, and in every case it should provide a non-skidding surface suitable for motor vehicle traffic. Concrete, suitably reinforced, is sometimes placed directly on the foundation. Concrete roads, however, are not considered desirable for roadways of a semi-private kind, such as the approaches to a club house, as they appear to be rigidly inflexible and do not harmonize particularly well with the adjoining planting and turf. Roads of other materials can be made less conspicuous and in pleasing harmony with the surroundings.

Climatic conditions must be considered in designing the roadbed. In cold climates frost action is very destructive to the roadways, and this is best counteracted by using a deep foundation of loose stone or gravel, which has a certain flexibility that permits it to adjust itself to the earth movement induced by frost without disrupting the upper part of the roadbed. In non-freezing climates, such precautions are not required, and the roadbed need only be strong enough to support the weight and impact of the traffic. Observation and experience have shown that the design of the successful roadbed varies with every section of the country because of the variation in available materials, the nature of the



soil, and cost of construction. Local customs of competent engineers are the best guides.

Drainage is of two kinds,—sub-surface and surface. The soil that supports the roadbed must be kept dry enough to be non-plastic and offer sufficient resistance to the traffic loads. This drainage is secured usually by preventing the absorption or infiltration of surface water by means of gutters built alongside the roadbed at a lower level. In some locations lines of drainage tile are laid under the roadway to remove the water and keep the ground comparatively dry.

Surface drainage is secured by slightly crowning the roadbed so that the water flows rapidly to the gutters on either side, except on the curves, where the water flows to the inner side of the curve. The gutters for these roads are made usually of large cobble stones laid in cement mortar on a deep bed of crushed stone or gravel similar to that under the roadbed. In comparatively flat roadways catch basins are built in the gutters at intervals, from which the water is conducted through drains to some suitable outlet.

The primary object of drainage is to effect the rapid and complete removal of water. Nothing is more destructive to roadways than water, which in times of excessive rainfall destroys the top surface by erosion, causes washouts and saturates the subsoil. Drainage entails considerable expense, but it is essential to permanent roadways,—as important as the foundations of a building.

It is often necessary to pass water under the roadway through culverts. Culverts should be of ample or even excess capacity, so as to prevent flood waters from flowing over and across the roadbed. Excess culvert capacity increases the initial cost, but it saves the reconstruction of the damaged roadbed. Culverts should be made strong and permanent, and their water courses should be kept free from deposits and debris.

The roadway immediately adjacent to the club house entrance should be as spacious as possible

to facilitate the rapid arrival and departure of motor vehicles. While this space should never be used for parking purposes, it may be so used when the capacity of regular parking space is insufficient. Naturally, such usage of the space at the entrance causes serious congestion.

**PARKING SPACES** must have a capacity sufficient for the usual peak load of club attendance. It is not customary to provide for overflow events, when temporary parking is permitted in the roadways and approaches to the club house. Continuous one-way traffic is essential to convenient parking and is conducive to safety and prevention of damage to vehicles. Maximum utilization of area is secured by parking the vehicles at an angle of 45 degrees to the road. In parking, the vehicles should drive into and back out from their spaces. This arrangement facilitates traffic and reduces the danger of collisions.

Rapid removal of surface water should be effected by pitching the surface of the parking area to suitable outlets into drains or gutters. Concrete paving, suitably reinforced with steel, is the most satisfactory for parking areas, for obvious reasons. The construction, however, must be thoroughly protected against the destructive action of frost in the sub-soil and injury to the top surface. The expense of concrete pavements for parking areas may prevent their use, and cause paving similar to that used in the roadways to be substituted. The traffic loads and impacts on these areas are not comparable to those on the roadways, and a less heavy form of construction can be used. The same means for surface and sub-surface drainage must be provided to prevent water damage to the construction.

Parking spaces are unsightly and detract from the attractiveness of club grounds. They should be removed as far from the club house as convenience will allow and should be effectively screened from view by trees and shrubbery best suited to the purpose. Coniferous trees provide an all-year screen, but they may be undesirable in the scheme.



Bel-Air Country Club, Bel-Air, Cal. Carleton Monroe Winslow, Architect

# PLANNING THE COUNTRY CLUB GROUNDS

BY  
CHARLES DOWNING LAY  
LANDSCAPE ARCHITECT

THE modern country club affords a good example of a communal enterprise organized to provide each member with amusements and luxuries too expensive for him to obtain alone, but it cannot stop with furnishing the physical equipment for games and sports. It must furnish companionship and congenial people to play with. In order to attract and hold its clientele, which is equal in importance to its golf courses and tennis courts and club house, it must go beyond the necessary equipment for sport and provide the luxurious environment and the pleasing scenes which attract the indolent and hold the vigorous player after the game is done. It is obvious that the more pleasing the club is, the more people will come and stay, and the easier it will be for the officers to manage. It is difficult to maintain the popularity of a club when it is handicapped by inconvenient arrangements around the club house and uninteresting surroundings. The country club is fast becoming the social center of every suburban community.

The time and expense devoted by the building committee to perfecting the layout of the grounds should give a handsome return to all club members and insure the success of the venture, but it is a problem which is always complicated by a number of conflicting demands. It is necessary that the outlook from the club house be pleasing, and it is also necessary that the house be easy to reach and conveniently near all the facilities for sport which the club affords. This causes the first of the many conflicts between utility and beauty, which can be adjusted only by a determination to make the necessary useful things as good to look at as possible. The problem from its nature requires great care in the proper coordination and balancing of all claims to predominance, and yet the problem is seldom carefully considered because the committee is often at first unaware of its difficulty and of the importance of having all claims presented to some judge or court of final appeal where each may be given its proper adjustment as a portion of the whole scheme. There is also the common reluctance of business men to spending money for intangibles, such as a critical expert study of a scheme.

Those who come to a country club may, for the purpose of this discussion, be divided into three classes: members; employes of members (chauffeurs, grooms, etc.); employes of the club, together with those concerned with service and supplies. For each class there are services to be per-

formed or facilities to be offered which must not be allowed to interfere with one another or with the pleasant outlook from the club house, or with easy access to the playing fields. All facilities or services must be figured at the maximum for holidays, such as the Fourth of July and Labor Day.

**SERVICE TO MEMBERS.** The club must furnish to the members easy access from the highway to the front door, parking space in pleasant and quiet surroundings, and an agreeable outlook from the club house. It must furnish also easy access from the club house to the various play fields, and as much in the way of lawns, shrubbery, gardens and terraces as possible.

**SERVICE TO CHAUFFEURS, ETC.** Chauffeurs and other employes of members must be given a convenient parking space for their employers' cars, where the chauffeurs will not be in a position to see their employers at play. They must have a dining room and sitting room with toilet facilities. Grooms, of course, must have similar accommodations, which will be near the stables.

**SERVICE TO EMPLOYES, TRADESMEN AND SERVANTS.** Tradesmen and servants must have a convenient parking space in the service court, and their going and coming in trucks, delivery wagons or buses must be separate from the areas and driveways of the members. Caddies, tennis court attendants, professionals of whatever kind, must have separate quarters near their work.

**THE LOCATION OF THE CLUB HOUSE.** The placing of the building may sometimes be determined by an unusual feature of the property, such as a fine view, a breezy hilltop, a stream or a lake, and in this case all the facilities for sport and all consideration of entrances and drives must be made secondary and the resulting inconveniences accepted as part of the conditions of the site. If the site can be chosen from among many, it would naturally be well drained so that sewage disposal will be easy; it would be the nearest convenient spot to the highway to save expensive road building; it would be possible to have a separate service entrance, and the surrounding land would be easy to develop for different games or sports. If the perfect building site is found on the property, it will then be necessary to consult the architect and to have sketches made for the proposed club house. The landscape architect must be asked about entrance drives, terraces, planting, tennis courts, swimming pools, etc., and if these two experts agree, the golf architect must be persuaded that the course can be laid out with the first tee

and the 18th green placed in convenient locations.

**ENTRANCE DRIVE.** It is essential that the entrance drive be as short and straight as possible. It should enter at right angles to the highway, on a level stretch, and it should itself be on only a slight grade for some distance. The entrance should be as readily seen as possible in order to make accidents rare. A double entrance drive, each permanently a one-way drive, will add to the safety and ease of using it, and a formal planting of hedges and rows of trees will make the purely utilitarian drive an imposing approach. There must be an easy turn before the door,—a roadway of 24 feet if possible, the outside diameter to be 100 feet, which leaves a central grass plot 52 feet in diameter. Parking in this turnaround must be prohibited. After leaving the front door the chauffeur will drive the car to a special parking space for chauffeur-driven cars, near the service court if possible, and if he is not to park and can leave the grounds with the empty car by a separate roadway, it will be better.

The owner-driver after leaving a passenger or his golf bag at the front door will drive on the outbound roadway or on one parallel to it, where he will park his car and walk back to the club house. This walk should not be long, and it must be level and shaded. It is better also if the car can be left in the shade. When the owner-driver leaves the club he must walk to the car, back it into the road, and be then headed out. If it is necessary to go to the club house again, he can take a crossroad to the entrance drive and go in and out again. Many of the member-drivers will be women, so it is necessary to have this parking space clean, orderly and in every way agreeable.

**THE SERVICE ENTRANCE** should nowhere connect with the main drive but should be as short and direct as possible from highway to back door. There must be ample area for parking cars, since ordinary deliveries take some time and there may be cars of various repairmen and mechanics parked all day. It is not unlikely that some of the employees will have their cars parked during working hours, and they should be in the service court, not with the chauffeurs or member-drivers. It would be convenient to have a shed for all-day cars in the service court.

**ROUTE TO THE LOCKER ROOM AND OUT.** From the front door the members of either sex should have a direct and separate route to the locker rooms, and through the locker rooms, without returning, to the sport field for which he or she has dressed. It is better, therefore, to have the locker rooms on a level with a door to the outside, without many steps. If members enter the building on the north side on the first floor level, they should go out on the east, south or west on the basement level.

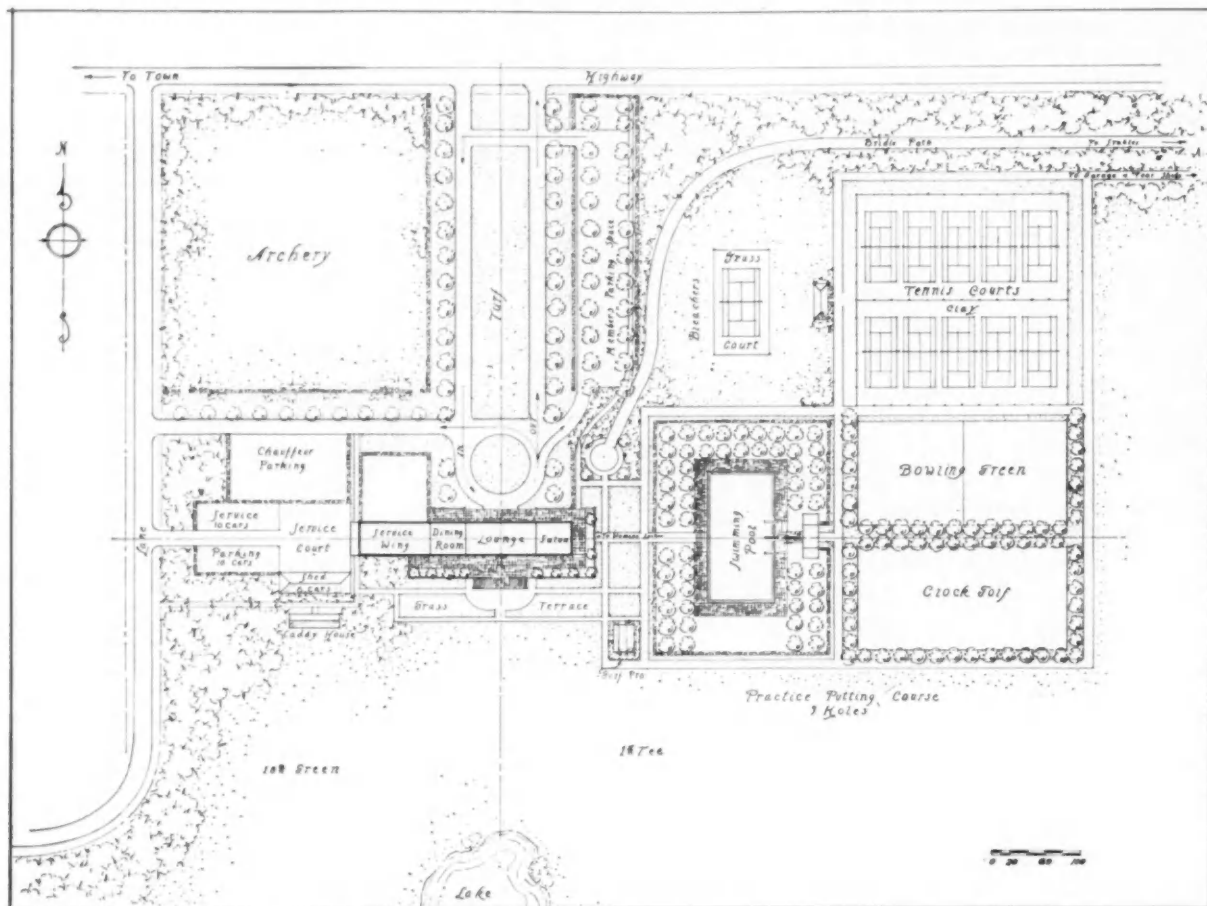
**GOLF.** The first tee should be as near as other considerations allow to the locker room, and the caddy house must be reasonably near the first tee, but not so near the club house that an occasional rumpus among the boys will annoy the members. A good place would be near the service court. The 18th green must also be as near the house as conditions permit, so that the walk is not too far to the 19th, wherever that may be. The golf course should have the long side of the building to itself in order to avoid interference with other activities, and to give all possible room for crowds on days when there are many players or important matches. If the situation is such that the golf course can be on the south of the building, a terrace on the first floor level, and possibly over the locker rooms, might give a view of the whole course and especially of the first tee and the 18th green. The golf professional's office must be near the first tee.

**SWIMMING POOL.** If there is no natural swimming nearby, a swimming pool is a great attraction, and even if there be natural swimming, a club pool is often more fun and well worth what it costs. The route from the locker room to the pool should be direct, away from the entrance, and out of the route of the golfers. If the golf course begins and ends on the south, it might be that the swimming pool could be nearby on the east, and that the women's locker room could be on the east near the pool, giving the women the shorter route to the pool. The pool will thus have a side toward the building, and it will be seen from an easterly terrace. The swimming pool must be considered a part of the social facilities of the club. It is not a bare "swimming hole" but a gathering place of the most attractive kind, complete in every detail. The swimming master must have his office near the pool.

**TENNIS COURTS** must, of course, run north and south, and they must be in the open and away from all trees which might cast their shadows across the courts in the late afternoon. It would be well to have one court of turf for exhibition games, and it should be separate from the clay courts and have room enough around it for a crowd of spectators. Because of the glare and the forest of back nets, it is not well to have the tennis courts too near the club house. Tennis players are the most active class in any club, so that it is only just to give them the longest distance to walk before beginning to play. The tennis professional's house should be close by.

**SKATING, CURLING, HOCKEY.** If there should be a pond, or a place for a pond, not too far from the club house on the south side and between the first tee and the 18th green, or somewhere on the north side, it would be a lucky arrangement, for an artificial pond is expensive to





An Ideal Plan of Golf and Country Club Grounds

make, and flooding a level area is always difficult and expensive except in a very cold climate. Good skating will do much to increase the winter attendance and make it possible to have exhibitions and carnivals.

**HORSEBACK RIDING.** There should be a separate court for grooms to wait with saddle horses near the locker rooms. The bridle path will lead from this court to the stables, polo field and jumps, and to the other bridle paths.

**OTHER GAMES.** Clock golf and small practice putting courses should be near the first tee, so that members waiting to play may have a little fun. A bowling green is pleasant to look at and might afford amusement. Archery and any other sport that seems attractive should be encouraged if the use seems to justify the expense of upkeep. Coasting and tobogganing are possible in some places, and the expense is small.

**STABLES** should be northeast of the club house and as far away as possible. Barns or sheds for motors, lawn mowers and tools should be in a central location, but near a highway if possible. All walks about the club house should be wide enough for a motor truck in order that the work of caring for lawns, trees and shrubbery may be as easy as possible without disfiguring the lawns.

**LAWNS AND PLANTING.** The necessary cost of keeping a golf course and other much used facilities in perfect condition is so great that it is always hard to get money for the planting and decoration of the grounds. The planting, therefore, must be simple, and it might be formal, which gives a greater effect for less cost than informal work.

**THE IDEAL PLAN.** The accompanying diagram illustrates an attempt to show the arrangement of club house grounds in an ideal way, as I have suggested here. It will perhaps never be possible to do the work on such a scale or in such a well knit way, but illustrating the ideal scheme may be the means of preventing many grave mistakes. A scheme somewhat similar but adapted to real conditions can be built slowly, and little work will have to be undone. If the work goes ahead without study, nothing is ever right, and every improvement necessitates the doing over of something done before. The view from too many club houses is spoiled by parked motors, and it happens often that the club house has been so arranged that no good place is left for swimming pool or tennis courts. A club house on an island in a sea of motors which must be crossed is not intelligently planned or arranged.



# GOLF CLUB LOCKER ROOMS

BY  
FRANK A. MOORE  
ARCHITECT

BACK in the early nineties, when that forceful architect, Richard M. Hunt, was presiding at a meeting of architects who were considering the manner in which the architecture of the World's Columbian Exposition, Chicago, was to be handled, Charles F. McKim held forth at some length in a more or less hesitating manner while expressing his views upon the subject. Finally, Mr. Hunt, who was of a nervous temperament, could stand it no longer, and giving vent to his feeling said: "Dammit, McKim, leave out the preambles and get down to business." With this "introductory writing" which is what Webster defines as a "preamble," and to avoid, if possible, the "dammit" of those who may read this article, let us get to the business of the locker room and its equipment.

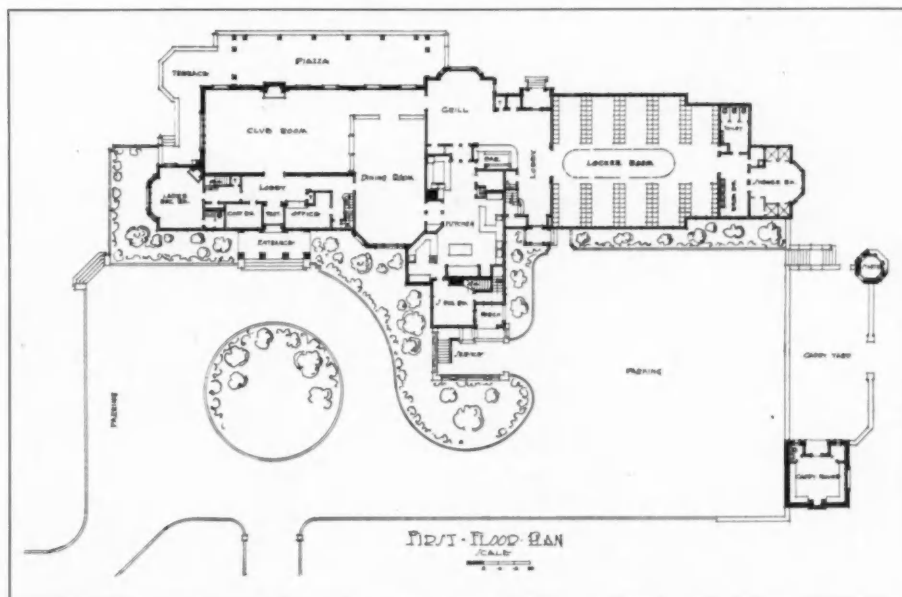
To begin with, while the locker room is almost the starting point in designing a golf club house, it may be said that there are a number of other important features which should have careful consideration, not only in their development individually but in the location and relative position each has with respect to the others. Many varied conditions, such as available area, orientation, approaches, natural lay of the land, valuable trees to be preserved, etc., may decide the location of the locker room and call for a carefully studied arrangement of the general layout.

A properly planned locker room is the most important feature in the modern golf club house, and it should provide not only proper locker accommodations, but be so accessible that a be-

lated arrival on a Saturday morning may make a hurried change to golf clothes and be on the first tee in order that his four-ball match may not be kept waiting. An ideal locker room should provide such a cheerful and restful retreat that after the four-ball match has holed out on the 18th, and when the players have returned to the club house, they will find close to their lockers comfortable chairs (with backs), tables (with glass tops), shakers (with ice) and, in short, a place so inviting and comfortable that the losers are pleased to pay, and the winners willing to give odds for the afternoon game.

It may be said that there are two general types of locker rooms,—one that has everything on one floor, and another that occupies more than one floor. In the type of locker room that has the lockers on one floor, an oblong plan will provide space perhaps for 150 lockers without extending the area of the locker room to ungainly proportions. If more than 150 lockers are required in a one-story locker room, the plan should be in the shape of a cross or of one main room with wings. So arranged, this one-story plan can be kept so as not to have the too-high roof that a large square area will demand.

Most golf clubs have memberships that call for from 300 to 400 lockers, and with that number without doubt a two-story locker room is the best solution. Of the various architectural treatments that have been worked out to meet these requirements, it seems that the best result is obtained by a locker room wing with an open well



First Floor Plan of the  
Tamarack Country Club,  
Inc., Greenwich, Conn.  
Frank A. Moore, Arch.

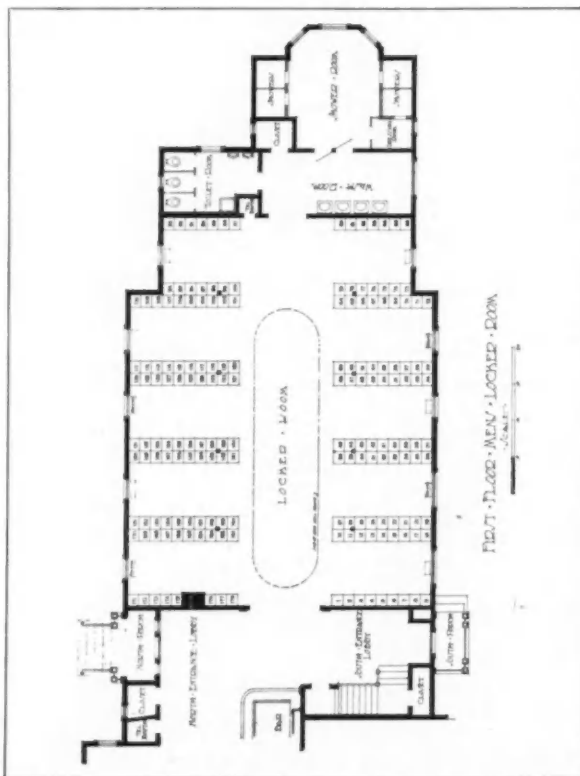


View of the First Floor of the Locker Room of the Tamarack Country Club. Frank A. Moore, Architect

at the center and the second floor treated as a sort of gallery above the first floor. The plan and development of such accommodations are shown in the illustrations. It will be noted that the second floor is supported on steel beams resting on small steel columns which are spaced so as to set back from the center well opening. The columns are very small and are boxed out to appear larger, as will be seen in the illustration; steel beams cantilever from the steel columns a distance of

nearly 5 feet and support the steel framing of the open well, which has a balcony guard rail with cast iron newels and iron balusters, the construction permitting proper bolting and stiffening of the railing, which, of course, is most necessary and important. The detail of this iron railing is worked out with a hardwood handrail, and at the floor level a raised lip is made to prevent golf balls which may have been dropped on the second floor from rolling over and down on the head of some golfer on the first floor who may be explaining at such a time why a putt on the last green was not made. With this two-story treatment not only double capacity of the locker room may be attained but a larger area may be covered to better advantage than with a one-story building or wing, as a deck roof can be introduced, which in a two-story building is easily camouflaged, while it is not so easily done in a one-story structure, and we all know that a large deck roof is an ugly feature except, perhaps, when the entire building has such a treatment. With the steel framing recommended in the two-story locker room and illustrated here, it is a simple matter to introduce in the construction trussed metal floor joists or steel lumber, which need not be large, as the spans between the steel beams do not exceed 12 feet; this construction renders unnecessary the use of all wood, and, what is equally important, prevents all settling and shrinkage.

Describing further the two-story locker room, the proper treatment gives top light over the center well, which may be made attractive by dome light sash set flush with the second floor ceiling and hiding the ventilated skylights above; also, with this treatment, the lockers are arranged in bays that are not too deep to get light and air from the window that is at the end of each bay.



First Floor Plan of the Locker Room, Tamarack Country Club, Greenwich, Conn.

View of the Second Floor of the Locker Room of the Tamarack Country Club. Frank A. Moore, Architect

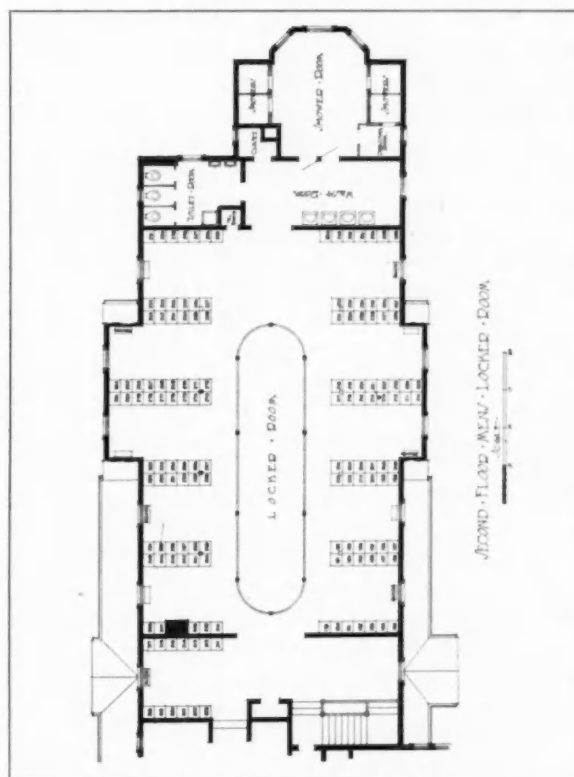


Crowding by too large a number of members in one place is avoided, and plenty of light, air and freedom of movement is obtained. With the open center well, 9 or 10 feet wide, the club members on the second or gallery floor are at all times in such close touch with those on the first floor, 9 feet below, that conversation and fellowship are convenient. "Sweet Adeline" may be sung in close harmony by a glee club partly on one level and partly on the other, and all enjoy it.

In the one-story locker room there will be, of course, plumbing for showers, toilets and lavatories combined in one unit sufficiently commodious for 300 or 400 lockers, making a large meeting place that at times causes more or less congestion of members coming and going, those with lockers close to the showers having less privacy, being in a sense in a congested district and suggesting at times the need of traffic regulations. In the two-story locker room, with each floor having half as much plumbing and half the number of members using each unit, the congestion is eliminated. A large one-story locker room requires a high ceiling on account of its area, while in a two-story locker room 9 feet is ample for each story, but the height effect is that of the two stories combined, the open well extending 20 feet or more above the first floor level.

Regarding locker room equipment, steel lockers are, of course, the only lockers that are considered in any modern golf club house, and they are made in various sizes, some with double doors and some with single doors, and in such heights as may be desired. A very satisfactory locker, and one which is recommended, measures 18 x 21 inches and is 60 inches high in addition to a 4-inch closed base at the floor. This allows for a top shelf with edge raised to retain loose golf balls, also for hooks and a rod for a coat hanger.

Some lockers are provided with small mirrors, over comb and brush pockets fastened to the insides of the doors and some have separate compartments with Yale locks. The stereotyped color is olive green, but other colors may be had. The lockers in the Tamarack Country Club, illustrated here, are of a light gray-blue. The locker room walls should, of course, be painted to harmonize with any color selected. Lockers arranged in open alcoves should not be higher than 5 feet,



Second Floor Plan of the Locker Room, Tamarack Country Club, Greenwich, Conn.





Two-Story Locker Room, Huntingdon Valley Country Club. Tilden, Register & Pepper, Archts.

4 inches from the floor, or else the open aspect of the room is destroyed.

Under the heading of equipment may be considered the kind of floors or floor coverings that should be adopted. Many well known clubs have cement floors with or without rubber or fiber runners in their locker rooms. Some clubs have wood floors. The best floor without doubt is a good rubber tile floor properly laid. Spiked shoes do not injure such a floor, nor does one slip on a rubber floor: it is easily taken care of, wears well, and when properly designed, it adds greatly to the appearance of the locker room.

Among other items in locker rooms that should have attention there are the windows; they should not be too large and should not be too high above the floors. Properly arranged windows will permit one to look out, but with the proper kind of curtains and screens, persons on the outside have much difficulty in looking in. Windows should be glazed with clear glass, and use of ground or semi-translucent glass avoided. The proper kind of curtains, generally called "glass curtains," are made of a French marquise covering the entire window opening, installed on  $\frac{3}{8}$ -inch brass rod-ding with a hem and heading at the top, having a double hem at the sides and bottom, and with lead weights at the lower corners. Such curtains will permit free ventilation when windows are open and will prevent anyone on the outside from looking in and viewing the revelry that sometimes takes place in a locker room.

The furniture equipment in the locker alcoves, should include strong benches that are quite low (14 inches is a good height) with a width of 16 inches; also two light small chairs, easily

moved, are desirable in each of the alcoves, and if well made and of the right design they will stand the hard usage they are likely to receive. There should be floor space near all lockers where tables and chairs can be placed, since the players of four-ball matches have much bookkeeping and other work to do before and after they take their showers. Fortunately, all golf matches do not finish at the same time, so one group may be ready to vacate a favorite table in time for another group to be accommodated at the same table when they may desire it. Small wall serving tables with open spaces below double rows of drawers where glasses, etc., are kept should be placed conveniently, to provide what may be needed for the various locker room tables. Telephone booths should be placed in locker rooms in convenient locations, not forgetting the shower room. Call bells are rather obsolete and are not necessary, as there should be a locker room attendant generally within call of a member in distress.

**THE WOMEN'S LOCKER ROOM** is necessarily much smaller than the men's and should be arranged so that it may be used in conjunction with the women's reception room. Lockers may be smaller and fewer in number than required for the men's locker room. However, if the greens committee is likely at any time to restrict the time that women may have the use of the links, it is suggested that the locker room should be flexible enough to permit of the addition of some extra lockers. Lockers 15 x 18 inches, 48 inches high are a convenient size for women and can be placed in double tiers, since this size permits easy access to the upper tier of lockers. In most cases many women as well as men prefer to keep their clubs in the racks provided for that purpose in the professional's work room. The windows in the women's locker room should have a different treatment from those of the men's room, and over-draperies at the windows in addition to the glass curtains, as called for in the men's room, should be introduced; also, cretonne-covered wicker chairs are more in keeping, and any benches that may be used are frequently covered with cushions to harmonize with the chair coverings. Dressing tables and mirrors should be properly arranged and adequate in number.

The showers in connection with the women's quarters should be arranged in cubicles so that each shower has a small dressing room, which may not be much larger than the shower itself; cubicles with bath tubs are also necessary in the women's quarters. Telephone booths should be located conveniently, and a maid's serving room is a desirable feature; this will afford a place where ice and soft drinks may be obtained without sending to the main source of supply, which is generally some distance away from the lockers.





## POLICY AND OPINION



### ABOUT BUILDING NOW

ARCHITECTS are in a position to influence the amount of building to be undertaken in the immediate future. Building is one of the basic industries, and one which is vital to national prosperity. In the final analysis, national prosperity is the sum total of local prosperity, and building activity is a large factor in local prosperity. Only by each architect's doing his part in increasing the building activity in his community can the desired result be brought about.

It seems essential that each architect do his utmost at this time to encourage clients and prospects to undertake their building operations immediately. This does not mean that there should be any artificial stimulation of building, but that a serious effort should be made to urge the undertaking of all legitimate building enterprises as soon as possible. All such enterprises should be carefully analyzed by the architect as to their economic soundness, for it is extremely unwise to advocate the erection of buildings which cannot be made to pay. There is a need in practically every community of new buildings of some types, and certainly there is the opportunity for remodeling of existing structures in order to make them more profitable. It is within the architect's power to advocate the immediate undertaking of such work. If the supply of buildings of a certain class is adequate in a community, the architect should direct his attention to the types for which there is a real need. A survey of the demands and possibilities should be undertaken by the architect at this time. Such a survey may indicate that there is an excess of buildings of certain types in the community, but it will also usually reveal that there is the need and the opportunity for certain other types of buildings,—or for remodeling. The need for schools, churches, hospitals, municipal and other institutional buildings should be carefully considered.

Conditions are now very favorable for building this spring. Capital is more readily available for such purposes than it has been for some time; material prices, with but few exceptions, are lower or at the same level as last year; and there is an abundant supply of willing labor. It is obvious that when labor is plentiful a building will be better built than in times of greatest activity when the contractor cannot choose the most efficient and skillful workmen. Each architect can do his part by pointing out to his clients and prospects the advisability of building now. K. K. S.

### LETTING THE WORLD KNOW

IT seems probable that in the near future an extensive and comprehensive campaign of advertising the architect and the value of architectural services will be undertaken by our contemporary, *Pencil Points*. The question "to advertise or not to advertise" has been discussed for years, and it has seemed unethical for reputable architects to advertise as firms or as individuals. In many communities advertising is not considered unethical unless it becomes blatant, and many firms regularly have their business cards, so to speak, in the newspapers and local periodicals of various kinds. Several architectural societies have carried on local campaigns which advertised the profession and gave publicity to the services rendered by architects without mention of specific firms. A notable campaign of this kind was that described by Mr. Nirdlinger in *THE ARCHITECTURAL FORUM* of October, 1928.

Advertising on a larger scale has been considered by the American Institute of Architects, but until this time no comprehensive campaign has been inaugurated. One of the deterrents has been that architects have been satisfied to follow the lead of members of architecture's sister professions of medicine and law, and as these professions have not seen fit to advertise, architects have not undertaken to do so. Old prejudices, however, are now giving way, and the conditions of present-day competition in the building industry seem to make it imperative that architects inform the public of their value and of their services if they are to "hold their own." For this reason, *Pencil Points* is undertaking to promote an effective and comprehensive advertising campaign for the benefit of the architectural profession. We feel sure that such a campaign properly conceived and executed will meet with the hearty approval of the profession. Those who are inaugurating this constructive step deserve the cooperation of all those interested in furthering the interests of architecture.

Architects have always regretted that the general public has not been informed of the value of the architect's service and that erroneous impressions exist as to the nature of his work and the charges for his service. The informatory documents published heretofore have not been given sufficiently wide distribution. Nation-wide advertising will undoubtedly do much to bring architects and the public closer together, which will be to the advantage of both. K. K. S.

# WATER SUPPLY AND DISTRIBUTION

BY  
H. J. REEVES  
CONSULTING ENGINEER

THE comparatively isolated locations of country and golf clubs make them usually inaccessible to municipal or public service water supplies, and it is generally necessary to find and develop sources of water supply upon or contiguous to the property of the club. The necessity for having an adequate supply of water should have a certain influence upon the selection of the property and must be given consideration commensurate with its relative importance in the complete conception of the undertaking. Water supply and its distribution involve a considerable item of expense which must be provided for in the budget for the enterprise, and this expense is best estimated by competent engineers whose advice and counsel are necessary from the inception of the planning.

**SOURCES OF SUPPLY.** The sources of water supply are municipal systems, rivers, lakes, ponds, wells, and springs. If the supply is furnished by municipalities or public service corporations, arrangements should be made to have them furnish sufficient volume and pressure for all requirements, especially during dry periods when the demand is sometimes so great that clubs have been notified to curtail their consumption and to use no water for irrigation purposes, thus causing considerable inconvenience and expense to secure other sources to draw from.

Rivers, lakes and ponds usually afford sufficient volume for the club house and grounds, but it is essential that a thorough examination and tests be made of all water sheds, streams and springs feeding such sources to ascertain if they will be sufficient to meet the requirements, especially if an artificial pond is to impound the necessary supply, which can be considerably reduced by loss through evaporation. It might also be necessary to install filter beds or mechanical filters in order to remove any contamination and make the system acceptable to the health authorities. Purification of water necessitates an expenditure for plant and operation that is of considerable importance, but this cost can be reduced by installing mechanical filters for water used for domestic and drinking purposes.

Wells are probably the principal sources of privately owned water supply. There have been developed types of wells and of pumps and other apparatus suitable for almost every local condition. Naturally, the cost of well drilling and equipment varies to a considerable degree, depending upon the depth to water-bearing strata and the nature of the ground penetrated. The

volume of water is generally adequate, and the purity of deep well water is usually acceptable, although these wells may become contaminated by sewage disposal systems or from other causes. The water may, infrequently, be impregnated with sulphur or other chemical substances that make it unpalatable, or the water may be of such a degree of hardness that it will require softening for boiler, laundry or bathing purposes.

**WATER PRESSURE.** Several methods are used to circulate the water through the distributing system with the required pressure at the outlets, the pressure being produced by water towers, elevated tanks, reservoirs or compression tanks. The water is pumped into the towers or tanks through a direct line from the pumps or through the distributing system. The location of the tower or elevated tank is determined by the topography of the ground. If the ground available is sufficiently elevated above the club house and the golf course, a comparatively low water tower can be used. Elevated tanks and water towers are commonly considered unsightly, but this objection can be overcome by selecting a suitable location, which will reduce their visibility from the club house and grounds. If woodland of sufficient elevation is available, a tank or tower can be effectively concealed from observation among the trees,—at least during the foliated season. Water pressure from whatever source is an absolute necessity. Elevated tanks and towers can be enclosed in stone or brick masonry of attractive architectural design. Such construction, however, is very often too expensive for the budget, as it serves a purely æsthetic purpose.

Storage reservoirs on elevated ground will provide the necessary water pressure and may be used in connection with a gravity system of distribution. Such reservoirs, however, are seldom used because of the expense of the large yardage of costly excavation and the impervious lining which is necessary to prevent wasteful seepage of water.

Underground storage reservoirs have a number of advantages over the elevated tank or tower. The elevated steel tank or tower has to be painted at intervals to prevent corrosion, and the riser pipe must be properly protected from freezing. Pressure storage tanks are frequently used, because they may be concealed underground and placed close to the pumps, or they may be located in or near the club house. These tanks are cylindrical in shape, made of steel plates, riveted or welded together, and placed horizontally.

**PUMPING EQUIPMENT.** When pumping from rivers, lakes or ponds, the pumping plant consists of triplex or centrifugal pumps, operated either by an electric motor or a gasoline engine, or both. For deep wells, two types of pumps can be secured, one having the drop pipe, rods and cylinder placed in the well to the proper depth. The centrifugal type of pump has the impellers or pumping parts placed in the well and the shafting extended to the surface, either electric motors or a gasoline engine being used to operate the pumps. In connection with the pumping unit, air-charging devices are used or a separate air compressor is installed to maintain the air pressure in the tanks; also, automatic starting and stopping switchboards are installed to control the pumping unit, so that the tanks or reservoirs can be kept filled without the necessity of having an engineer in constant attendance.

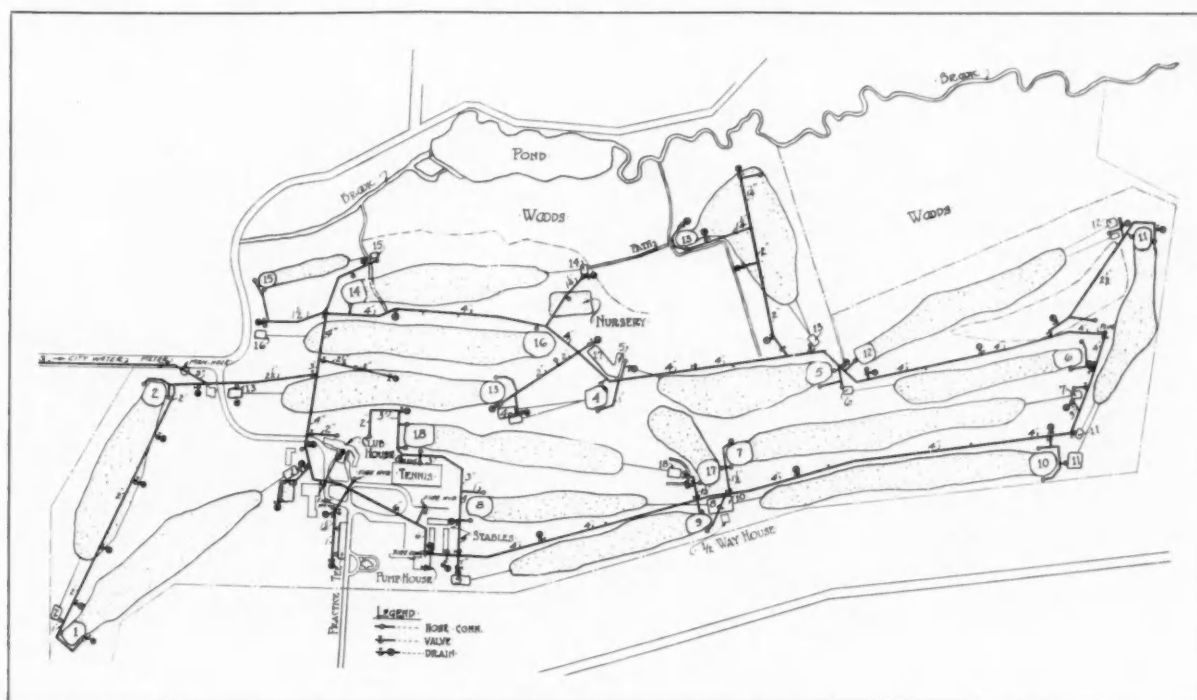
**USES OF WATER.** Water is used in country and golf clubs for domestic and sanitary purposes, for irrigation of the grounds, and for interior and exterior fire protection. Domestic and sanitary water supply requires water of a degree of purity that conforms to board of health standards. Irrigation and fire protection water can be impure in quality, and this differentiation of quality will permit the use of untreated water drawn from lakes, ponds and rivers. In some instances, country and golf clubs resort to two or more sources of water supply, as determined by the available amounts of water, cost of service, topographical conditions and other economic fac-

tors. The water drawn from lakes, ponds and rivers is considered to be the best for irrigation purposes, because of the entrained vegetable and soil matter contained therein.

**DISTRIBUTION SYSTEM.** The distribution system originates at the source of supply and extends first of all to either the pressure storage tanks, water tower or elevated water tank. When the water tower or elevated water tank is used to provide pressure, it is directly connected to the pump with a pipe line, from which the distributing lines can receive their water content by direct connection rather than through a separate line from the tower or tank.

Distributing systems are of two kinds, one of which forms a continuous loop, and the other consisting of two or more lines having dead ends. The continuous loop system, while more expensive, provides a better and more uniform flow of water. From the main lines, laterals are run to the desired locations. The primary purpose of irrigation water lines is to provide water for the greens, at which two hose connection outlets should be provided, one on each side of the green. One flush hydrant of a similar type is sometimes placed near each tee. In some systems, such as that employed at the Hollywood Golf Club, Deal, N. J., the water mains run parallel to and between the fairways. Flush hydrants are placed in these mains to provide water for irrigating the fairways.

Control valves are placed at all branch connections, so that the laterals can be cut out when



Plan of Golf Course Water System, Hollywood Golf Club, Deal, N. J.



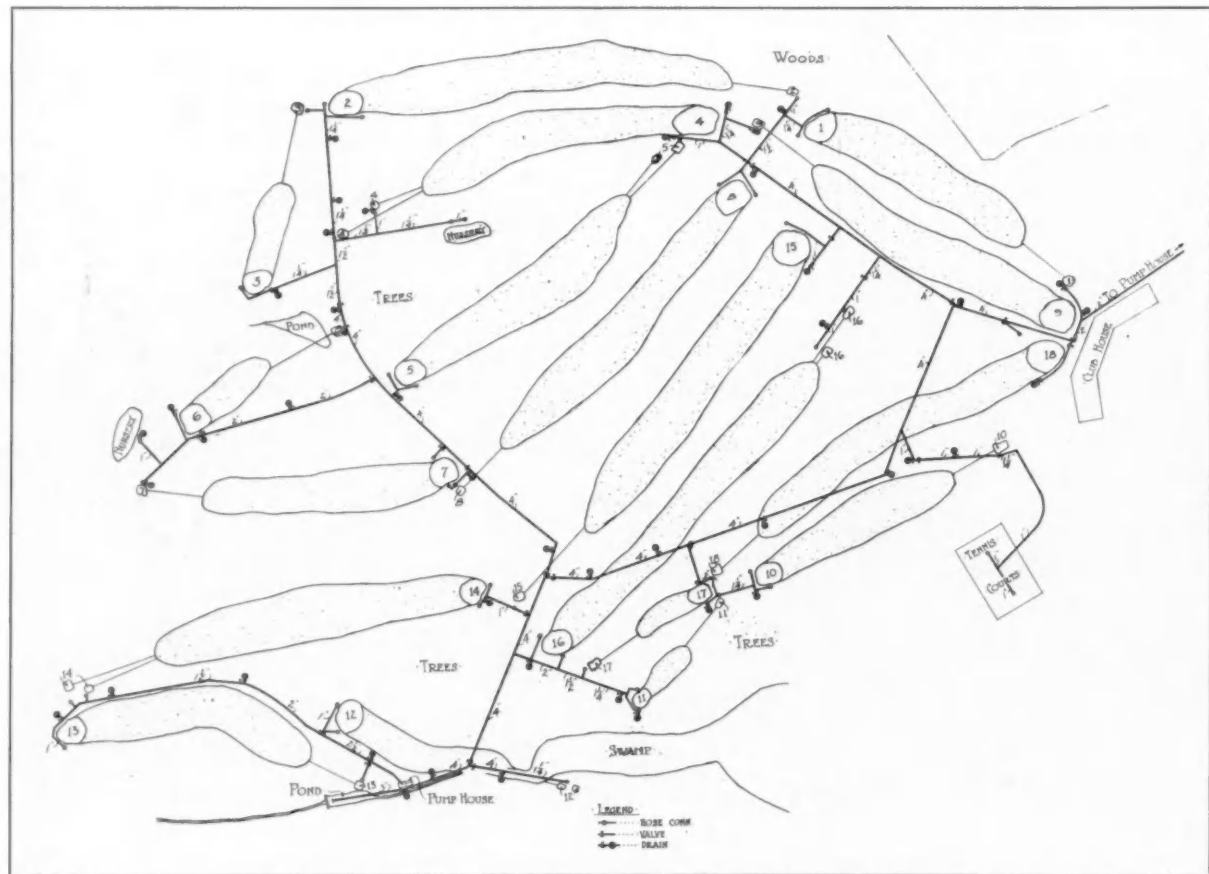
necessary. Drain valves are placed at low points to divert the water into sumps when the system is drained for the winter season. Fire hydrants are placed about the buildings for exterior fire protection. The average daily water consumption in dry weather is from 15,000 to 20,000 gallons for the grounds and from 8,000 to 10,000 gallons for the club house.

**HOLLYWOOD GOLF CLUB.** The distributing system at the Hollywood Golf Club, Deal, N. J., is of the loop type. A 4-inch, galvanized, wrought iron water main extends from the pump house around the golf course, making a complete loop. Branch laterals are taken off from this main to supply the flush hydrants at the greens, tees and buildings. Water is procured from a 14-inch well, 1,200 feet deep, which has a capacity of 450 gallons per minute. The deep well pump has a capacity of 200 gallons per minute. The four underground pressure tanks, 8 feet in diameter and 40 feet long, have a storage capacity of 60,000 gallons. The water pressure varies from 50 to 85 pounds per square inch. A 3-inch connection is made to the city water system for emergency use.

**ROUND HILL GOLF CLUB.** The water distribution system at the Round Hill Golf Club,

Greenwich, Conn., is of the dead-end type. The mains are of 4-inch cast iron pipe, and the laterals of galvanized wrought iron pipe. The mains supply two principal branches extending along three sides of the grounds. The water for irrigation is secured from an artificial pond, made by damming up a creek, which has a capacity of 100,000 gallons. The pump has a capacity of 100 gallons per minute, and discharges into two pressure tanks, 8 feet in diameter and 40 feet long, providing a storage capacity of 30,000 gallons. The house water service is supplied from a well and pump house located about 500 feet from the club house. This service is also connected to the irrigation system for emergency use. A 4-inch connection is also made to the city water service. Thus there are three sources of water supply.

It will be observed that several features are common to all water systems, but they and the many other correlated factors must be adjusted for each project in order to secure the most effective and most economical layout. Water supply and distribution constitute a special feature that is best designed with the close coöperation of the engineer of water supply and the golf architect with the architect of the club house.



Plan of Golf Course Water System, Round Hill Golf Club. Greenwich, Conn.



## OUTDOOR SWIMMING POOLS FOR CLUBS

BY

M. F. HASBROUCK

SWIMMING POOL ENGINEER

**D**URING the past few years there has been an increasing demand for the swimming pool in connection with country clubs and beach clubs. The reason for this is obvious, as the swimming pool, wherever installed, has proved itself a valuable asset to club life, as both a social and a financial factor. Socially, it has stimulated interest for a great many members who, as non-golf players, have joined the club wholly for the associations it will give them, making use of it only upon featured occasions. For such, the pool has created a new center of daily interest and added activity during the summer season, attracting swimmers and spectators alike.

Economically, the introduction of the pool with its added daily activity and its drawing attraction for members has in turn increased the revenue of the club from the standpoint of the managers of the dining room, the grill and all other departments from which revenue is to be derived. There are numerous examples where the pool has proved a great financial asset to the country club. In one particular case, the club in question provided for

tennis, baseball and bowling, but had no golf course. Other clubs in the immediate vicinity were developed. Members of the old club were resigning to associate themselves with the new clubs, which resulted in a very embarrassing position financially. This was met by the construction of a pool, which helped in building up the membership to a point where there is a long waiting list. It has been the experience that due to the increased activities where pools have been installed, the club finds itself running to a surplus instead of a deficit. A swimming pool has also been helpful financially to a club which adopts a plan of offering an associate membership. Such membership does not allow golf privileges, but it does include tennis and other activities which are not over-crowded. Associate membership is in great demand, for there are a great many people who do not care to go to the expense of full club membership but who would join if the club afforded something which the family as a whole could enjoy daily through the entire season, such as the swimming pool.



*Photo. Gillies*

A Terrace Overlooking a Pool is Doubly Attractive  
Metropolis Country Club, White Plains, New York  
M. F. Hasbrouck, Swimming Pool Engineer



Swimming Pool, Manhasset Yacht Club, Manhasset, L. I.

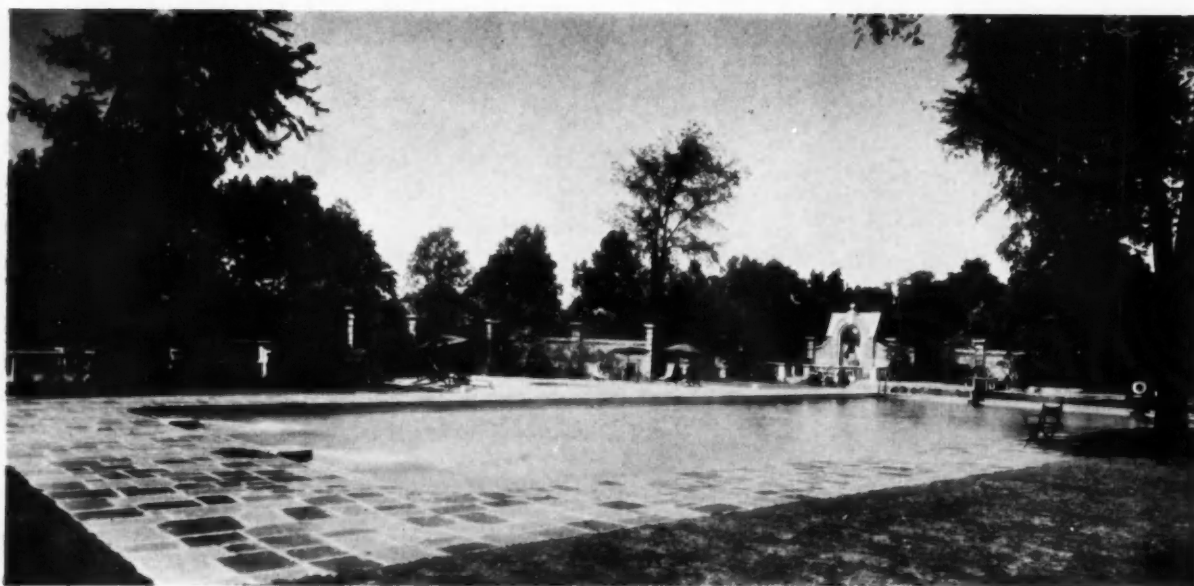
Th. Engelhardt, Architect

M. F. Hasbrouck, Swimming Pool Engineer

THE PROBLEM OF WATER SUPPLY is in many instances vital. The country club may not be located near a municipal water system and may have to depend largely upon its own supply, which is often taken from wells. The pool idea has consequently been abandoned frequently, because of the scarcity of water. This is not as serious a question as might be supposed, for if a club has a supply which will give enough water

for the sprinkling of the greens during the drought period, the pool instead of decreasing the supply would add materially to the water system's resources, as in this case it would act as a reservoir or retaining basin. The greens can thus be watered and the pool replenished without additional expense.

THE LOCATION of the pool in reference to the club house is very important. The pool is a



Swimming Pool, Nassau Country Club, Glen Cove, L. I.

William Lawrence Bottomley, Architect

M. F. Hasbrouck, Swimming Pool Engineer



Terrace Overlooks the Pool, Racquet and Swimming Club, Ardsley, N. Y.

Arthur Loomis Harmon, Architect

M. F. Hasbrouck, Swimming Pool Engineer

great source of entertainment for those who do not indulge in activities such as golf, tennis, etc. Many people come to the club as on-lookers, to meet their friends and enjoy the activities and the sociability. From the social point of view, the pool should be placed close to the club house so that service can be had and enjoyed. Another reason for placing it near the club house is so that the golfer or the tennis player who has ex-

ercised will go for a plunge and enjoy the reaction that only swimming can give.

**SHAPE AND SIZE OF POOL.** In most instances, the rectangular pool will be desirable, as it is best adapted to water sports, and incidentally because it is the easiest to construct. The pool should be at least 60 feet in length, which is the minimum length as sanctioned by the A. A. U., and of a minimum of 20 feet in width. A pool



Photos. Gillies

View of Pool and Bay, Manhasset Yacht Club, Manhasset, L. I.

Th. Engelhardt, Architect

M. F. Hasbrouck, Swimming Pool Engineer



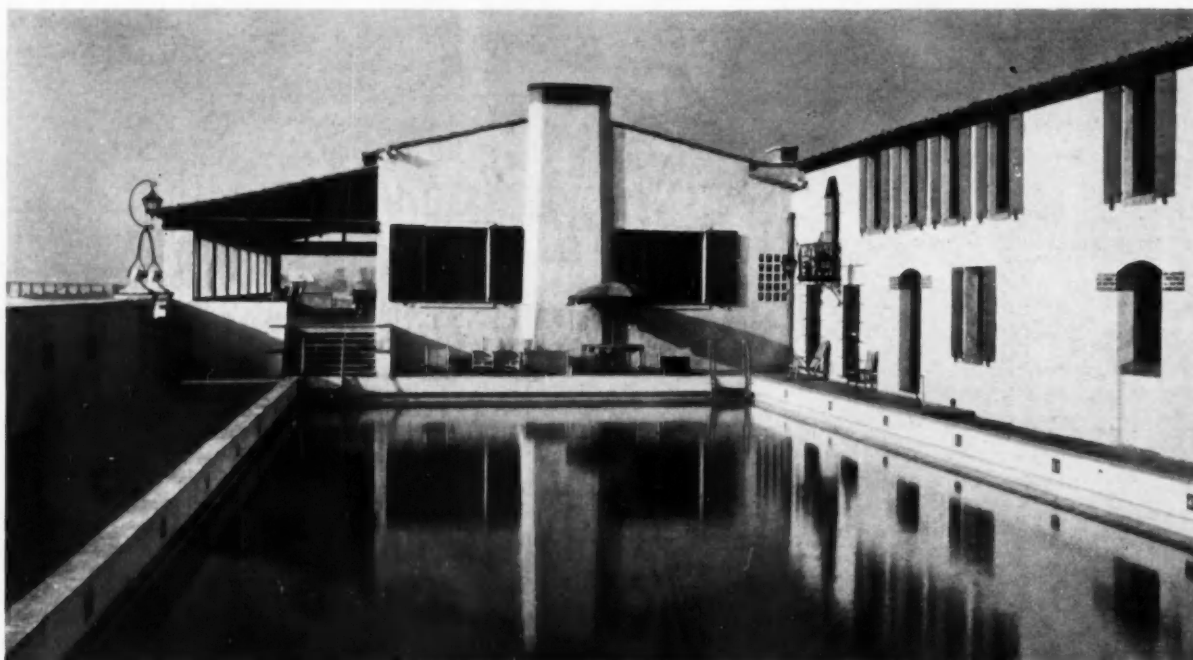
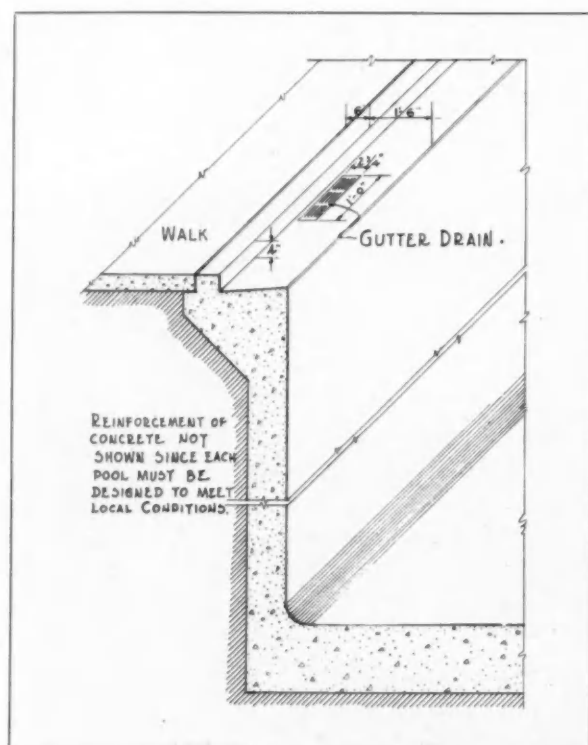


Photo. Padilla

Pool of the Westport Beach Club  
Palisades Del Rey, Cal.  
Stephen Goosson, Architect



Isometric Drawing of the  
Flat Type Gutter for  
Outdoor Swimming Pools

75 feet long is better adapted for racing, inasmuch as it is 25 yards, and 4 lengths of the pool make the 100-yard distance. It is well, if possible, to have the width of the pool in multiples of 5 feet, as the minimum racing lane is 5 feet wide. The depth of the usual pool varies from 3 feet at the shallow end to 9 feet, 6 inches at a point about 18 feet from the spring board end, which is the deepest point. The accepted shape of the bottom of the pool allows approximately two fifths of the length of the pool as shallow area, varying from 3 to 5 feet in depth.

**THE POOL STRUCTURE.** The usual material for outdoor pools is reinforced concrete. A thorough survey of the conditions at the site should be made and the structure designed for these conditions. The calculations for the pool structure must take into account the stresses under two conditions: first, when the pool is empty and acts as a retaining wall for the earth or sand; and second, when the pool is full of water and hydrostatic pressure is exerted in the opposite direction. The size and spacing of the reinforcement constitute the main structural design problems for the engineer to solve. A well drained base is necessary, and under no conditions should a pool be placed on filled ground unless satisfactory supporting walls are carried down to a firm base. The possibility of injury to the pool by frost and by temperature changes must be eliminated by the engineer through careful design and close supervision of the construction.

**GUTTERS.** The open type of gutter illustrated in the isometric drawing is the preferred type





Swimming Pool, Glen Echo Country Club  
Normandy, Mo.  
Preston J. Bradshaw, Architect

for outdoor pools. The recessed type, which has been usual in indoor pools, is not as satisfactory from the point of view of maintenance, or as desirable from the swimmer's point of view, besides being more expensive to construct and being more susceptible to damage from frosts. The open type of gutter is preferred by swimmers because of the ease with which one may get out of the pool and may sit along the edges. The flat type gutter should be made of a non-slip material, and great care must be exercised in the supervision and the laying of this material so that it will not be split off by frosts. It is desirable to carry this non-slip material or tile down just a foot or so below the surface of the water, the remainder of the pool being finished in cement.

**POOL FINISH.** A most satisfactory and permanent result may be obtained by having the concrete forms built of flooring in continuous panels, such forms being sanded, well oiled, and with all rough surfaces removed. The forms should be erected without the use of any tie wires, spreaders or bolts in the form area, and the walls should be poured continuously and thoroughly spaded. There has been developed in the last few years a paint which stands up satisfactorily under weather and submersion conditions. The flat type scum gutter is usually 1 foot, 6 inches in width and has a pitch of 1 inch from the pool.

**WALKS OR RUNWAYS.** A most satisfactory material for the walk around the pool is bluestone



Pool and Diving Platform  
San Clemente Beach Club, Cal.  
Virgil Westbrook, Architect

and practical. Cement in various colors and designs can also be made very pleasing. Wood slat walks, if properly designed and constructed, are satisfactory, but are less orderly in appearance and less permanent.

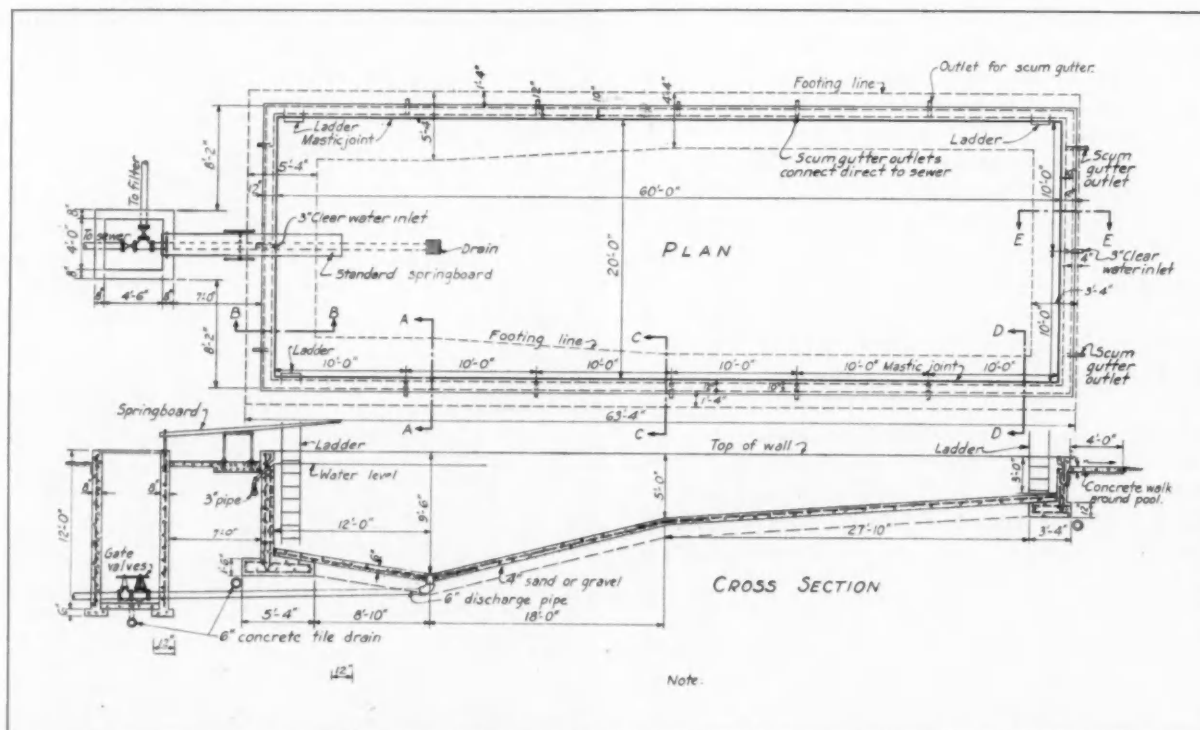
**WATER SUPPLY.** The water problem must be solved with reference to the local conditions in each particular case. Thorough research and an analysis of the water will determine whether or not a filtration plant will be necessary. Many water supplies, especially well water, may have a large algæ content which, when pumped from the ground and subjected to the sun, will discolor both pool and water. The algæ growth may be eliminated by the use of copper sulphate, the treatment depending entirely upon the type and amount of algæ present. If a re-circulating system is to be employed, the pool should have a water turnover at least twice every 24 hours, and in some cases three complete turnovers every 24 hours will give more satisfactory results. Probably the most satisfactory sterilizing agent for the water is chlorine, which not only sterilizes the water but in some cases prevents the growth of algæ. The chlorination apparatus must be chosen as to size for the particular pool.

The length of time which the pool may be used without being emptied and cleaned depends again on local conditions. Some pools are emptied laid on a cement base. This is both attractive

once a week, others once a month, and in some cases a pool may be used almost an entire season without being emptied. The use of pumps, filters, sterilization and a high ratio of circulation tends to keep the pool clean. In the cleaning of the pool, a vacuum or suction type cleaner may be used and is sanitary. Such a cleaner may be operated by the circulation pump. A broom of special design can also be used very satisfactorily.

**PIPING AND PLUMBING** systems require expert engineering service, as the piping system must be designed for the lowest possible friction losses. A common fault is to make the pipe capacities entirely too small. The location of the inlets and outlets is also an important factor, and there are several forms of practice which give satisfactory results. Naturally, all fittings which are incorporated in the pool structure should be of non-corrosive material.

**CHILDREN'S POOL.** A pool for children is an asset to the club, and if possible it should not be in direct communication with the main pool, although it is well to have it close by. The children's pool should be not more than 14 inches in depth at its brim and should pitch to a low point which is not more than 2 feet in depth. It is well to have this pool surrounded by a fairly large area of sand, but care must be taken that the sand does not find its way into the pipes, which in turn will cause stoppage.



Plan and Longitudinal Section of a Pool as Developed by the Portland Cement Association. Each Pool, However, Must be Designed for Its Particular Requirements and Conditions by a Competent Expert. The Open Flat Gutter is Better Than That Shown in the Diagram

# CLUB SANITATION AND SHOWERS

BY  
OTTO E. GOLDSCHMIDT  
CONSULTING ENGINEER

WITH all the progress made in American building construction, nothing has added more to our comfort and convenience as modern bathing and toilet facilities. These are of particular importance in the design and construction of the modern country club house.

**DRAINAGE.** When the sewage disposal system has been definitely planned,—whether it be a public sewage disposal system, a private sewage disposal, a cesspool, or something else,—it is necessary that the proper house drainage be provided. For the house sewer, soil and waste lines extra heavy cast iron soil pipe with joints properly calked should be provided. Fittings should be extra heavy cast iron of the recess type. All of this pipe should be installed with a pitch at least  $\frac{1}{8}$  inch to the foot. The venting of these lines is also very important so as to avoid the siphonage of traps, causing sewer gas to escape into the building. Most towns and cities have plumbing regulations which must be followed, but, where the club house is built in an outlying district not under the control of town or city regulation, particular care should be taken to have the work installed in accordance with the best practice and to see that proper tests of the piping system are made before the building is occupied. Particular attention must also be given to kitchen drainage, and grease traps should be provided on drain lines from kitchen sinks where a considerable amount of greasy waste may be discharged. The number of floor drains, in kitchens, etc., should be kept to a minimum because the water in the trap seal evaporates rapidly where little water is discharged to replace it and permits the escape of sewer gas and odors into the room. A study should also be made of the disposition of the rain water from the roofs, and where inside leaders are provided they should be properly trapped before they connect into the house sewer. These leaders are also frequently discharged into dry wells, or into ravines.

**PLUMBING FIXTURES.** For the toilets, water closets should be selected which are quiet in operation. These can be flushed, however, with the low down tank or with flush valves. Flush valves should not be used unless ample water pressure is available. For the men's toilets urinals should be provided, and where these are of the stall type they should be spaced so as to leave 3 or 4 inches between the fixtures in order that these spaces can be kept clean without difficulty. Slop sinks should be provided where possible in a separate closet conveniently located on each floor.

Lavatories are available in a number of different forms, and a selection of the type to be used should be carefully made. The vitreous china lavatories are the most desirable to use, as they are not porous. Enameled iron lavatories are also available and will serve the purpose where low cost is the first consideration. Liquid soap dispensers are sometimes desirable, and these come as individual dispensers mounted on or over each lavatory. Where lavatories are installed in groups, a small elevated tank containing liquid soap and located in an adjoining closet may be provided with small piping connections and a dispensing valve at each lavatory.

Bathtubs of enameled iron are usually furnished in private rooms and can be obtained so that they are acid- and stain-proof. Waste and supply fittings are now so constructed that trap doors for access to them are unnecessary. These tubs should be of the "built-in" recess or corner type. It is desirable to provide showers with suitable shower curtains over tubs in private rooms.

**SHOWER ROOMS AND SHOWERS.** There is no room in a club house that requires more careful thought and study than the shower room, because, due to the water and vapor conditions, some finishes and materials depreciate very rapidly. Long experience has emphasized the necessity for very careful selection of materials and very thoughtful detailing. Wood should be eliminated as far as possible because of its swelling and warping. Windows and window frames of shower rooms should be of non-corrosive, non-rusting materials, without exception. The door to the room should be of non-corrosive, hollow metal. The lath should not be of the ordinary type but should be heavily galvanized after fabrication, otherwise moisture will rust out the lath and the plaster will fall. Most paints will peel under shower room conditions. Color can be introduced by pigments in the finish plaster coat, and Portland cement plaster should be used. Glazed brick or tile give a permanent finish to the walls. Shower stalls should have a non-slip flooring to avoid accident. Non-slip tile 1 x 2 inches may be had in various colors and forms an excellent surface over a cement base. Under the shower stall base should be a 6-pound lead sheeting pan. The shower drain should be placed at the back of the shower stall in order that the water and soap may not collect where a person steps, and the shower control should be located so that one does not have to reach through the shower stream to op-



erate the control valves. The water supply pipe should be large so that there will be adequate pressure even when all showers are being used.

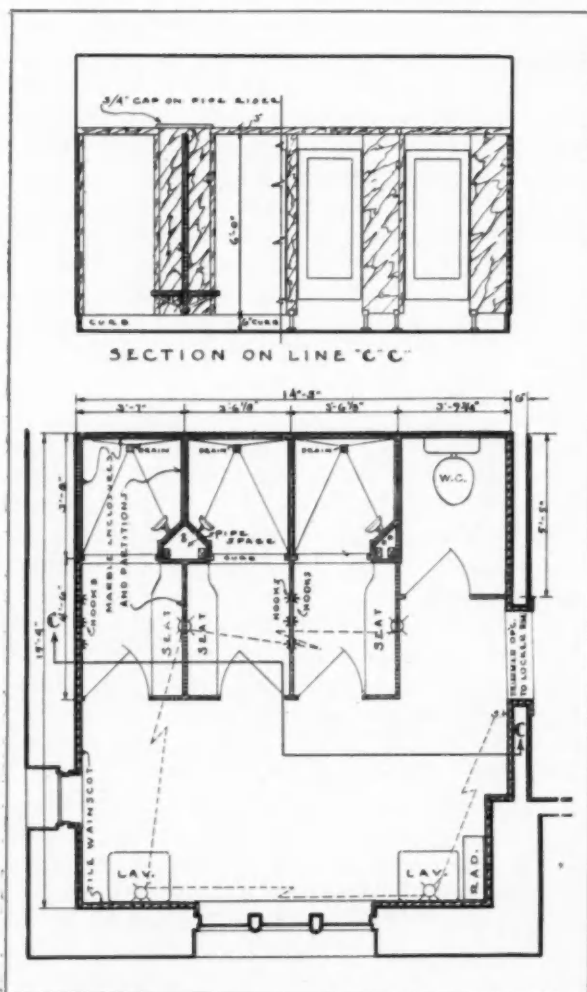
For the shower rooms an adequate number of showers should be provided, and these should be so equipped as to give a generous flow of water. Anti-scalding valves are desirable, but they add to the expense. Some provision at any rate should be made to obviate the possibility of scalding, as it is a very real danger. Thermostatic control at the hot water tank is possible and should be considered.

One of the new developments in plumbing fixtures is the production of fixtures in various colors, which enables the architect to design bathrooms in different color schemes. However, a certain amount of care is necessary to insure perfect harmony in the shades of the different fixtures

to be placed in the same bathroom, since the manufacturers have some difficulty in reproducing the colors exactly in the firing of the fixtures. Another decided advance is in the elimination of types of plating which corrode or discolor readily. The new chromium plate, which is quite permanent, needs practically no polishing and adds very little to the cost, is therefore recommended.

**WATER PIPING.** Nothing can lead to a greater repair expense after a comparatively short period of service than improper water supply piping. This applies both to the size of the piping and the materials used. Most water has some chemical effect on galvanized pipe, and this effect is considerably increased when the water is heated. Galvanized wrought iron, or galvanized steel or brass pipe, is usually used for water supply piping. No definite rule can be laid down as to the most desirable pipe to be utilized. The character of the water supply should be carefully studied and the water analyzed before making a decision as to the pipe to be used. The proportioning of water supply lines is also an important factor so that an ample flow of water will be provided at the various fixtures even when others are in use. This is of particular importance in connection with the showers, where, if the cold water supply suddenly fails, serious scalding may result to the bathers. To prevent this, thermostatic valves are available which may be installed individually or for groups of showers. These do not permit the passage to the shower of water of a higher temperature than that for which they are set.

**HOT WATER HEATERS.** One of the important items for the showers and kitchens is an ample supply of hot water at all times. In order to accomplish this it is customary to provide generous storage capacity in the form of hot water tanks so that a large volume of water may be constantly available. The water supply may be heated in several different ways. Where the steam boiler equipment has been made sufficiently large to take care of the hot water supply requirements, storage tanks should be provided containing a nest of copper steam coils mounted in a head and made removable. The steam supply for these coils should be automatically controlled by the temperature of the water in the tank. This equipment may be augmented by the installation of coal- or oil-fired heaters with circulating lines connected directly into the storage tank shell. This permits the steam boilers to supply steam for hot water during the heating season, and the direct-fired heater can be used during the summer when no steam heat is required. This equipment, of course, lends itself to various modifications, depending upon the demands and size of the club house. In many cases it may be desirable to have the hot water heaters copper-lined so as to avoid the dis-



Detail of Women's Shower Room, Upper Montclair Country Club, Clifton, N. J., Peabody, Wilson & Brown, Architects. This Detail Shows the Dressing Rooms in Connection with the Showers, and Also an Ingenious Arrangement of the Shower Stalls with Pipe Spaces in the Corners. Such Pipe Spaces Can be Made Accessible and Eliminate the Necessity of an Aisle Pipe Space in Back of the Shower Stalls



coloration which sometimes results where hot water comes in direct contact with steel or iron. This lining is also a protection against "pitting" of the steel shell of the heater.

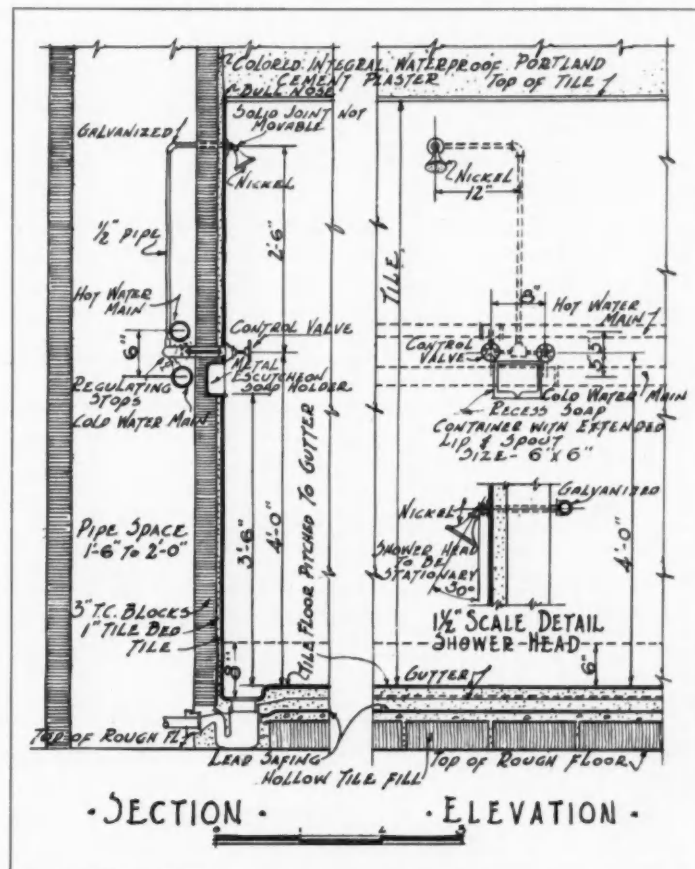
**FILTERS, PUMPS, ETC.** Where the water supply is such that it contains sediment or impurities, it is frequently desirable to provide suitable sand filters. These should be of generous capacity and should be flushed or cleaned by reversing the flow of water at frequent intervals. Chemical tanks for the precipitation of suspended matter held in the water should be furnished with the filter. Care should be taken that the quantity of a chemical discharged into the water is only sufficient to give the required results. An electric sump pump for draining a basement which is below the sewer level is sometimes necessary, and this should be mounted in a suitable catch basin and the discharge connected into the house drain. Where it is desired to install plumbing fixtures in the basement of a building and this happens to be below the level of the sewer, it is necessary to provide sewage ejectors. These can be obtained in different forms, are electrically operated, and should usually be installed in duplicate.

**CLOTHES DRYERS.** Every club should be equipped with suitable clothes dryers. These should be located somewhere adjacent to the

locker rooms and are desirable for use when an ardent golfer has been caught in a shower and comes in with his clothes "soaking wet." These dryers should be heated either by steam coils or coils from the hot water heaters so that they may be in service throughout the year. The capacity of these dryers is of course dependent upon the size of the club.

**SPRINKLER SYSTEM.** In the past very few country club houses have been built of fireproof construction, and as a result there have been many unfortunate fires. The introduction of a sprinkler system into a country club house very materially lessens the fire hazard, and as a result the insurance rate is considerably reduced. The sprinkler heads must be installed throughout the building in accordance with the regulations of the National Board of Fire Underwriters. The piping for supplying the sprinkler heads is usually concealed in the furred ceilings, and the installation is so made that only the sprinkler heads are visible. It is necessary for the operation of the sprinkler system to provide any two of these sources of water supply; a proper connection to the street mains where the water pressure is adequate; a pressure tank of required capacity; a gravity tank of required capacity and set on a required elevation; or a fire pump properly connected.

Section and Elevation of Typical Shower Detail Developed and Adopted by the Architectural Bureau of the National Council of the Y. M. C. A. Section Shows the Pipe Space Behind the Row of Showers. These Details Show the Results of Years of Experience in Y. M. C. A. Buildings. The Conditions in Country Clubs are Such That More Elaborate Equipment May be Used, as Showers Are Not Subject to as Hard Usage and Abuse as They Receive in Y. M. C. A. Buildings



# COUNTRY CLUB SEWAGE DISPOSAL

BY  
BENJAMIN F. PEASE  
CONSULTING ENGINEER

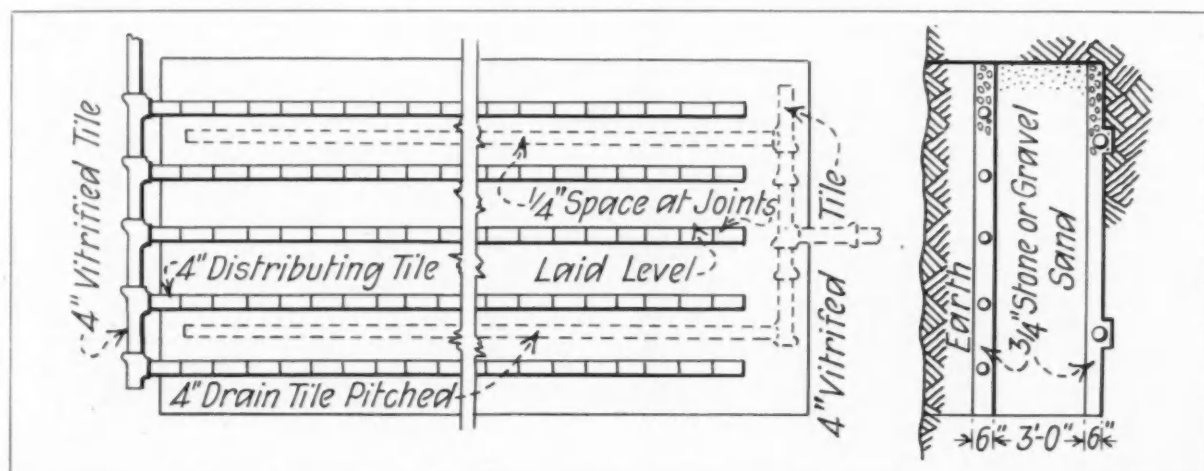
WHEN the golf or country club has access to a publicly owned or established sewerage system, the problem of sewage disposal is solved very easily. This condition of accessibility to an established sewerage system is very unusual, however, and the only method of sewage disposal generally available is one by which the sewerage system is confined within the limits of the club property. Sewage disposal is of such great importance in public welfare that it is controlled by the regulations of, and approved by, the state health department in many states. It should be considered from the inception of the club project along with the selection of the site, club buildings, golf course, landscape architecture, and water supply and distribution.

The relative importance of these components of the well planned club may vary with the conditions, and it is demonstrated by experience that a satisfactory sewerage system results only from its proper consideration coincident with that of all the other components. From the aspect of public welfare, sewage disposal and pure water supply are the two essential elements of club designing. It is obvious that the sanitary engineer should be consulted along with the building, golf and landscape architects and the water supply engineer. Unless the sewerage system is laid out in the beginning, even approximately, it is not unusual to find that suitable areas are not available because of interference by other club facilities. Under these conditions, the construction of an adequate sewage disposal system is made, if at all, at an increased cost, which might have been avoided by proper procedure.

**PRELIMINARY SURVEY.** It is essential that a preliminary study be made of the topography of the grounds, character of the soil, area available for the sewerage system, and the estimated volume of sewage. The topography of the grounds practically fixes the location for the disposal of the effluent from the septic tank, the area being dependent on the volume of sewage, and consideration must also be given to the location of the source of water supply. The relation of topography to water supply may be misleading. An instance is recorded where the well is located on a plateau at the base of some high hills. The sewerage system is located on the low ground sloping toward a stream. An unsuspected geological fault in the ground conducted the effluent into the underground water reservoir which supplied the well and polluted the water. This condition is very unusual, but the character of the topography must control the location of the system.

Explorations must be made to determine the character of the soil, and the area established for the disposal of the effluent. The character of the soil determines the method of disposal to be used, and the volume of sewage depends upon the number of people to be served.

**CONTROLLING CONDITIONS.** With these data it is possible to design an adequate and satisfactory sewerage system, the elements of which consist of a method of reducing the entrained solids so as to leave a liquid effluent and to purify and dispose of the effluent in a sanitary and unobjectionable manner. In several states it is illegal to waste raw sewage or unpurified effluent into any pond, lake or waterway, but it is permissible,



Subsurface Sand Filters are Built When the Ground is to be Planted for Use. Dimensions Proportioned to the Volume of Effluent to be Filtered

under some conditions, to waste the purified effluent into such places. The reduction and purification by mechanical or chemical means involve an expensive method which can be undertaken only by comparatively large communities, and isolated golf and country clubs must resort to the least expensive of efficient methods. The nature of the soil and the available ground area are the determining factors in selecting the method of disposal.

**SEWAGE REDUCTION.** The usual means for sewage reduction is the septic tank. The septic tank most suitable for golf and country clubs is usually a closed receptacle placed in the ground and covered with earth. At times there is practically no flow of sewage from the club house, while at certain periods of the day the flow is heavy, and unless the tank is of ample capacity these "peak load" flows will unduly agitate the contents of the tank and cause undigested solids to be washed into the disposal fields. Experience has shown that preferably the tank should be rectangular in shape and have a water depth of at least 4 feet and be of a width so proportioned to the length that the flow of velocity of the sewage will be so slow that the contents of the tank are not unduly disturbed.

The correctly designed tank should have sufficient capacity to retain a 24-hour flow of sewage, allowing 35 gallons per attending member. Above the water level sufficient space must be provided for the accumulation of certain matter that rises to and floats on the surface of the water and is retained in the tank by baffle plates. The solid content of the sewage settles to the bottom of the tank and is digested and destroyed by bacterial action after a sufficient exposure thereto. The vegetable and animal matter is destroyed by the bacteria, and a finely divided mineral substance is deposited on the bottom of the tank.

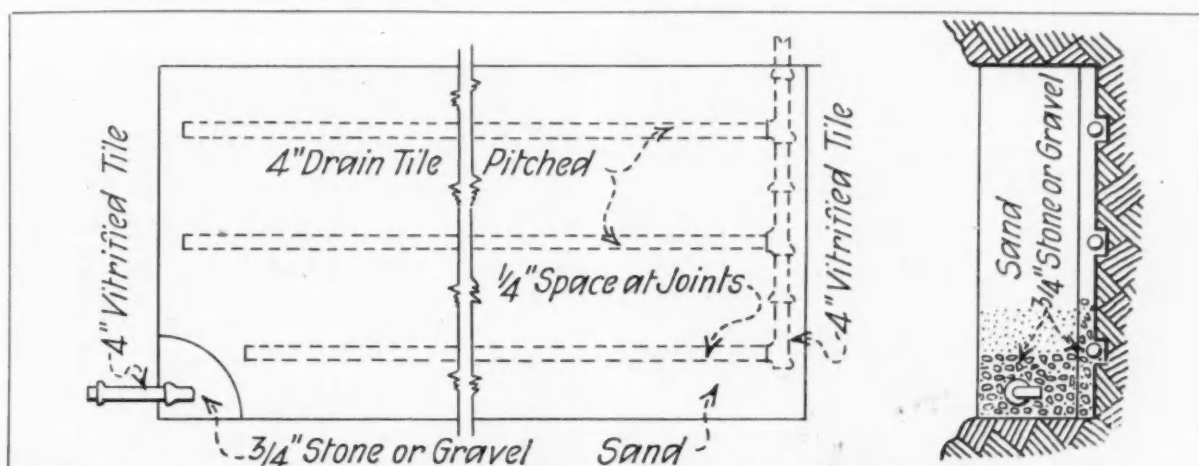
This grayish sediment must be removed when the accumulation is of a certain depth. Contrary to popular belief, the septic tank treatment does not purify the effluent nor destroy disease germs.

The effluent overflows from the septic tank into a siphon chamber. This chamber is attached to the septic tank and discharges its accumulated contents by siphonic action at intervals into the disposal system. There are no moving parts in connection with the siphon chamber.

For golf and country clubs, the septic tanks and siphon chambers are specially designed for the required service and are generally built in position. They are made of concrete suitably reinforced to prevent cracking from any of several common causes, or of brick, burnt clay tile, or stone. All tanks must be made impervious to seepage. Access to the tanks and siphon chambers is provided by manholes made of cast iron frames and covers. Sometimes ready-made tanks are connected in series to provide sufficient capacity. This is not good practice, and in many cases it causes trouble because the sewage is not evenly distributed throughout the tanks and clogs up the first few units.

Successful septic and siphon tanks are not designed by any rule-of-thumb calculations. They are designed each for a particular project, with allowances made for every related condition. Correct designing results from experience and observation and challenges the best ability and knowledge of the sanitary engineer.

**SEWAGE DISPOSAL.** The discharged effluent, as it leaves the siphon chamber, is putrefactive because it has not been exposed to oxygen. Oxygen is necessary for converting sewage into a non-putrefactive state and for destroying the entrained disease germs. The latter, however, may be destroyed by chlorination or other chemical process.



Open Sand Filters are Built When the Surface is Not to be Planted for Use. Dimensions Proportioned to the Volume of Effluent to be Filtered



The common method of disposal is to pass the discharged effluent through an underground, open-jointed, agricultural drain tile line leading to a diverting box which acts as a two-way valve. Two drains pass from the diverting box, each of which divides into a series of parallel drains of sufficient number and length. After a sufficient amount of effluent has been discharged into one series of disposal lines, the effluent is diverted into the other system, while the first system absorbs and purifies the effluent and becomes ready to receive another discharge. The drain tiles are laid in trenches from 12 to 18 inches wide and 24 inches deep. The tile is surrounded with gravel or broken stone and the trench filled in with earth to the ground level. In some soils the effluent can be discharged into leaching wells or large trenches without using a siphon chamber. The absorption of the effluent in the ground exposes it to oxygen which destroys the putrefactive content and the disease germs. The fluid then becomes purified and seeks its way into natural waterways or is evaporated from the surface of the ground.

When the soil is non-absorbent, or where high level ground waters prevail, or a shallow top soil is underlaid with rock or impervious hardpan, it is necessary to employ some kind of treatment for the tank effluent. Generally a sub-surface or open type of sand filter is used. The open type is preferable, as a more stable and better purified effluent is secured than is possible with the sub-surface type of sand filter. After proper filtration the effluent can be piped to a stream of water, if such is available. In case no stream is

available, an area of waste land must be acquired upon which the filtered water can be spread. In every case, extreme care must be exercised in both the designing and construction of such systems.

#### PLOT PLAN AND SERVICE DIRECTIONS.

A carefully prepared plan of the entire system should be furnished to the owner and architect in order that any part of the system can be located when necessary. Directions for servicing the system should be provided for the use of the custodian in charge.

**SUCCESSFUL OPERATION.** Successful operation of a sewage disposal system can be effected only with an adequate and properly designed plant. Such plants cannot be constructed without considerable cost, and their purchase should not be made on a purely competitive price basis. The reasonableness and adequacy of the plan and the reputation of the sanitary engineer for successful performance should be the controlling factors in the awarding of the contract.

To reconstruct an inadequate and non-operating plant usually entails an expense which, added to the initial cost of the plant, far exceeds the amount of the original proposal for a properly designed system,—and the plant can never be first class in every particular. The cost of the sewage disposal plant should be represented by a liberal item in the golf and country club construction cost budget. The preliminary consideration of the system should be thorough and directed by a competent sanitary engineer. Installing a successful sewage disposal system is a necessity that cannot be avoided.



Below. Laying the Lines of Drain Tile in the Sand Filter

Left. Building the Walls of the Reinforced Concrete Septic Tank and Siphon Chamber





# COUNTRY CLUB FOOD SERVICE

BY

VINCENT R. BLISS

OF TAYLOR, ROGERS & BLISS, INC., CONSULTANTS

THE important question in connection with country club food service involves common sense judgment more than technical skill. It is the problem of reconciling the desire for good cooking and excellent service with the equally urgent demand for economy under very difficult operating conditions. A club would not be a club without an excellent cuisine. Club managers and hard working house committees say in an injured tone that members are exacting and critical and that there is no quicker way to provoke a storm of protest than to permit any let-down in the character of the dining room service,—yet this is just what should be expected. The man who joins a country club knows that he could arrange to play golf or tennis at a far smaller expense by other means, and he makes the investment in a club membership only because of the desire to pursue his athletic activities under circumstances which are socially more pleasing to him. Therefore, the dining room service must be conducted upon a high level, and the demands of members must be fully met.

**OPERATING CONDITIONS.** But there is another side to the problem which cannot be avoided. The country club restaurant faces operating conditions which make economy and efficiency impossible, at least when judged by commercial standards. The fluctuation of club restaurant patronage is of the most extreme character. In summer it will be heavy; in winter it may be practically nil. On week ends and holidays the dining room facilities may be swamped, while on week days the demand may drop to only 10 per cent of the capacity. Even within the course of a single day, fluctuation from meal to meal will be extreme. And finally, to make the situation even more difficult, one encounters the element of unpredictability; for on one hand inclement weather may completely upset the normal expectation of heavy patronage on holidays, while on the other the sudden decision of a member to entertain a large number of guests may place an unexpected tax upon the facilities.

It does not follow, however, that nothing can be done to alleviate the situation. Through a succession of experiences it has been found that foresight in the planning of the club building and in the handling of kitchen equipment problems will minimize the difficulties of food service operation, and under reasonably favorable conditions they are even successful in reducing operating losses to a nominal figure. The method by which this is accomplished is to plan both the dining rooms

and kitchen so that they may be extremely flexible in their capacity and in the number of employees required for their operation.

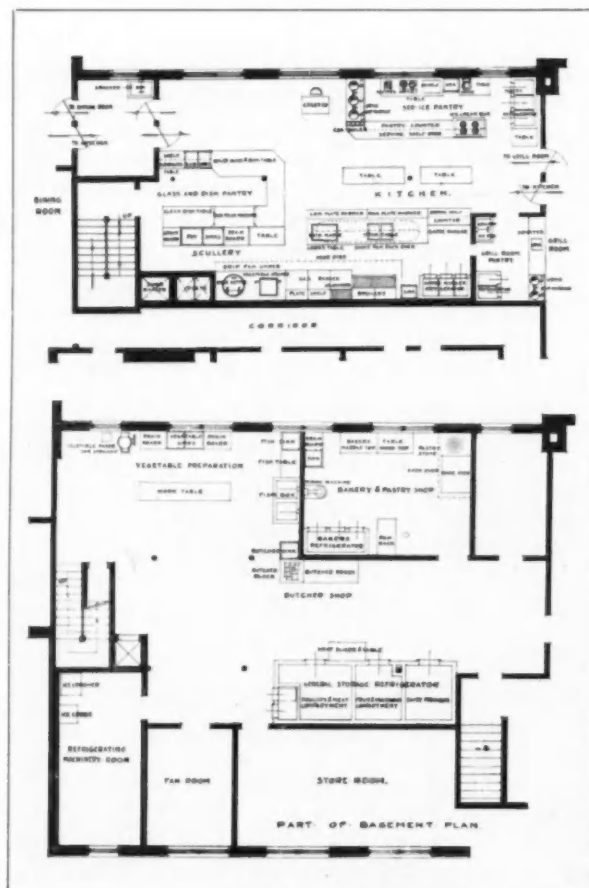
**ANALYSIS OF REQUIREMENTS.** Before making any attempt to arrive at the sizes and number of dining rooms for a country club, a real effort should be made to analyze the individual local conditions under which the restaurant will operate. This may sound like a very elementary statement, but because of its very obviousness this preliminary analysis is very frequently ignored, which may be the cause of many faults or extravagances. Between two clubs of exactly the same sized membership there may be a world of difference in the food service requirements, due to such factors as location with respect to the community from which the membership is drawn, transportation facilities, wealth and social characteristics of the members, the clubs' programs of social activities, the policy toward tournaments or group entertainment, and even climatic conditions. It is true that most new club projects are conceived before the precise characteristics of membership can be determined, and it may be rather irksome for the architect to attempt analysis of local conditions and peculiarities because of the indefiniteness of the factors which need to be considered. Nevertheless, this should be done.

It will be logical to expect that any club having a considerable amount of purely entertainment activity or one which admits a group of non-golfing members will make more extensive use of the dining rooms than one which is made up of a membership primarily interested in playing the game. In the former case, the necessity of compensating for extreme fluctuations in patronage will be less, and consequently the dining room and kitchen planning can be carried out more nearly in accordance with the ordinary principles which hold true in hotels and restaurants.

**NUMBER AND SIZES OF DINING ROOMS.** The first move in the planning of food service facilities is the determination of seating capacity of the dining rooms, which in turn depends upon the volume of service. In no case would there be any inclination deliberately to provide for the peak load but rather to arrive at a compromise which will more nearly approximate the average normal requirement. In the golf club, however, to arrive at such a compromise figure rather reminds one of attempting to find an average between the sizes of a mouse and an elephant, for holiday patronage may run as high as 500 or 600 meals, while ordinary week days will drop per-



Men's Grill Room, Glen Oaks Golf Club,  
Great Neck, Long Island, N. Y., Showing  
the Buffet Service Counter



Kitchen Plans, Glen Oaks Golf Club  
Buchman & Kahn, Architects

haps to 50 or 60 or even lower. A compromise between two such extremes would fit neither; what is needed is flexibility. Thus the most successful policy has been to provide dining rooms of a medium capacity but to arrange them in such a manner that they can be expanded by additional tables being placed upon verandas or terraces or in the lounge or club room. In this manner service can be restricted to the actual dining rooms during the slack periods, while in holiday time or for special occasions a very large portion of the club building can be temporarily converted into supplementary restaurant space. In accordance with this it will be found that the typical golf club of about 300 members will be well served by dining rooms having a normal seating capacity of about 100 and a maximum or expanded capacity that may run anywhere from 50 to 100 seats more.

It is quite common to find clubs with a very large membership, and of these establishments the 36-hole club with a membership of about 600 is probably most popular. A club of this size offers many advantages, not the least of which is the fact that the club building can be more economically built and operated per member than with smaller establishments. In a club of this size the dining room will not need to be increased in direct proportion to the larger membership, and it will usually be found that a normal dining room seating capacity of about 175 should serve the purpose, provided, of course, that the need for emergency expansion can be met effectively. As to the number of dining rooms, it will be found that there are good reasons for splitting the total seating capacity into at least two units. A need for



The Kitchen, Glen Oaks Golf Club  
Buchman & Kahn, Architects

providing a grill room for the use of the men is quite obvious, but it is equally wise to remember that by having two dining rooms the flexibility of operation is aided, due to the fact that one of them can be shut down during dull times, a policy which can be applied either to days in the week or to hours in the day. The area which should be calculated for these dining rooms may be figured upon the usual basis of 12 to 16 square feet per seat. It will be found best to be fairly liberal in this respect, since the objectionable features of crowding should be tolerated only where severe conditions make it unavoidable.

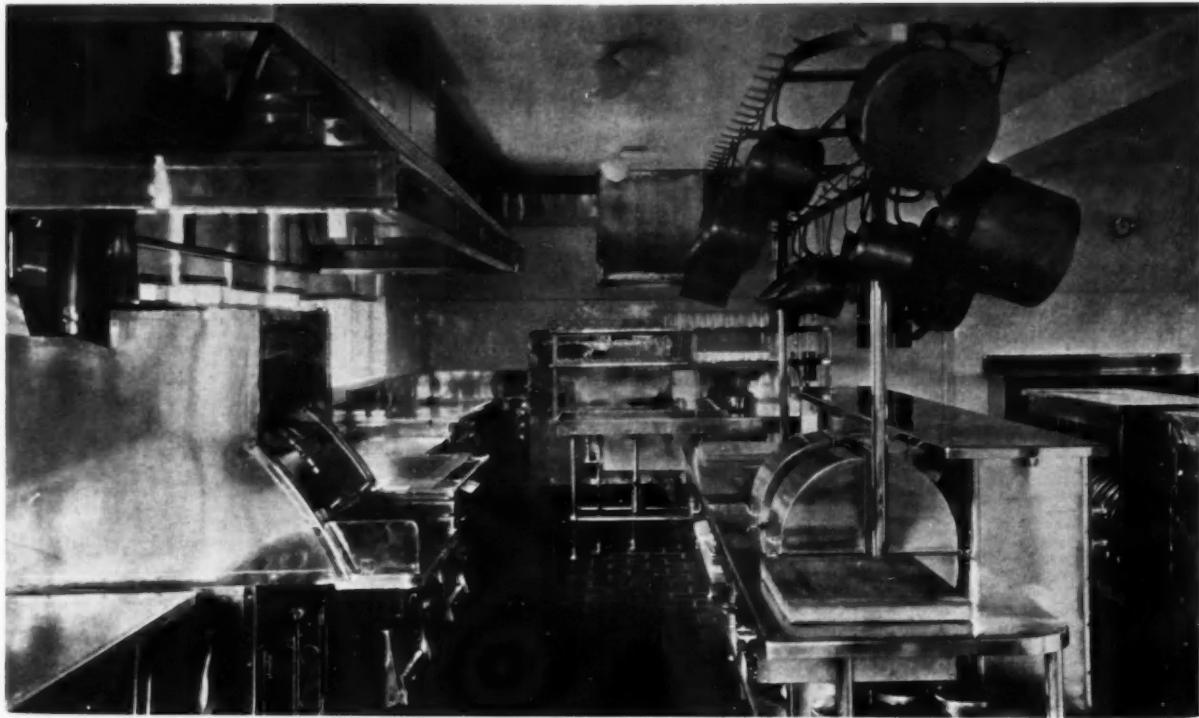
**LOCATION OF DINING ROOMS.** While the room arrangement in the club building is never expected to be stereotyped, there are advantages which can be obtained through following certain ideas of relative locations that have proved their value through experience. The men's grill, for example, will be most satisfactory if placed quite close to the men's locker room entrance and detached as much as possible from the club foyer and lounge. This permits the men to make full use of the grill room while still in their golfing clothes, and allows them to enter it either from the locker room or through the men's entrance without disturbing the other parts of the club. There is an added advantage in the fact that by this arrangement it is possible to arrange for refreshment or even meal service to the locker rooms from the main kitchen by way of the grill. The main dining room, on the contrary, should appropriately form part of the group of social

rooms, usually adjoining the club lounge, and if possible the verandas as well. The openings between these rooms should be large so that when extra tables are placed in the clubroom or on the veranda, the waiters can serve them without having to pass through narrow doorways.

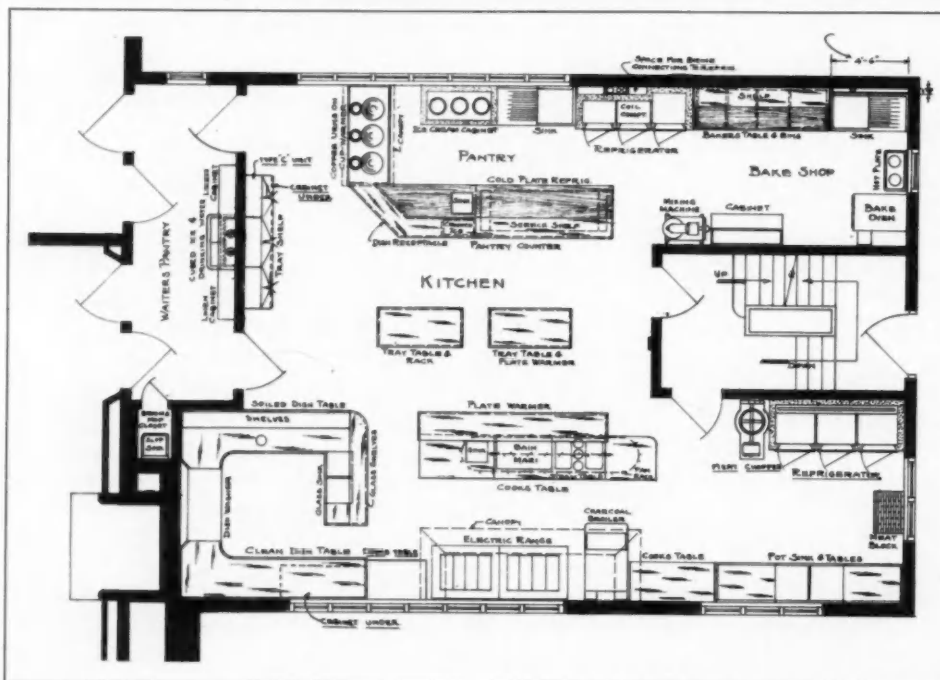
The most important factor in the location of dining rooms, however, is the kitchen. This should directly adjoin the rooms it serves. While it is possible to locate the kitchen in the basement beneath the dining room, this is seldom necessary in a club, and it is not conducive to the best operation. It is practical, however, to segregate some of the kitchen facilities, such as store rooms and certain preparation departments, in basement space, as for instance was done in the Dearborn Country Club, the plans of which are shown.

**SIZE OF KITCHEN.** The proportion of kitchen area to dining room space for country club restaurants differs radically from the ordinary practice followed in connection with hotels and restaurants because of the flexible character of the dining room capacity. If one were to base the size of the club kitchen upon the normal seating capacity of the dining rooms, it can be easily understood that the kitchen would be unable to handle holiday crowds. This is one case which requires peak load planning, and the kitchen area should be determined by calculating the area of the *expanded* dining rooms and then applying the





View of the Sparkling Main Kitchen of the Dearborn Country Club, Dearborn, Mich. Albert Kahn, Arch.



Plan of the Kitchen of the Dearborn Country Club, Showing the Arrangement of the Equipment. Other Departments of the Kitchen are in the Basement

usual proportion ( $33 \frac{1}{3}$  to 50 per cent exclusive of store rooms). For example, one well planned country club has a dining room area of 1,935 square feet to which, when necessary, 1,840 square feet of veranda space can be added, making a total expanded area of 3,775 square feet. Its kitchen occupies 1,260 square feet, which is  $33 \frac{1}{3}$  per cent of the expanded area.

As is known to most architects, such a general space formula cannot be applied unreservedly to

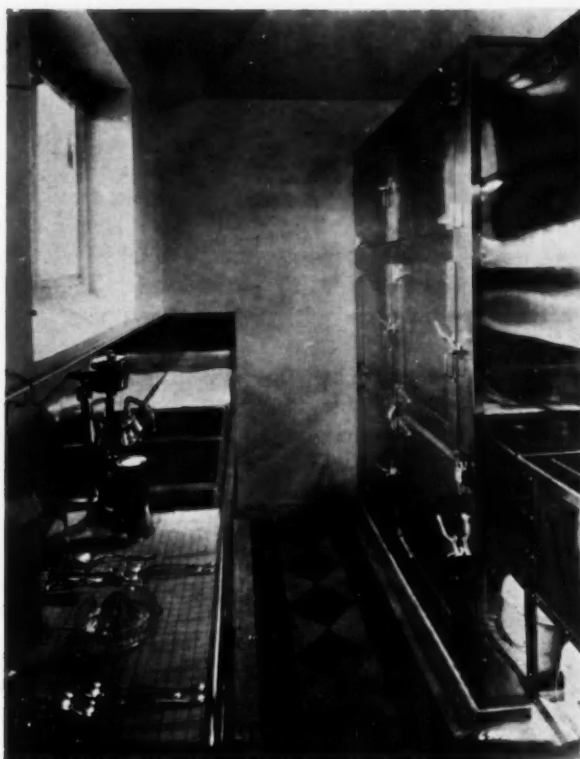
an individual problem, for it may need to be adjusted to meet various special conditions. The shape of the room and the location of service exits, especially in very small kitchens, may require that the equipment be arranged in such a way that it will take more than the ordinary area. Other factors, such as location of certain departments in basement space, may affect it in the opposite manner. Theoretical formulæ, therefore, should be used only tentatively.



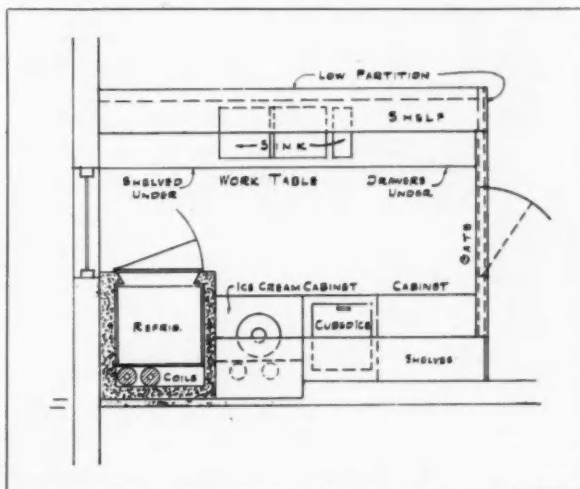
**CHARACTER OF SERVICE.** Most club restaurants employ the orthodox waiter service method of operation. There is little demand for cafeterias or lunch counters, for such quick service arrangements are not in harmony with a club atmosphere. The buffet idea of serving, however, has much to recommend it. On week days, evenings or at other times when few members are present, the number of dining room employees can be greatly reduced by serving buffet style lunches only, and the members should have no objection to such a policy. There are several ways to use the idea, of which the best is probably to include a buffet kitchen opening into the men's grill room.

**KITCHEN FACILITIES.** The country club kitchen will not be large, and will be simple in its equipment and layout. In most respects it will be similar to any other waiter-service kitchen. The principal difference will be that in the club kitchen an arrangement will be sought that permits greater flexibility in operation. The equipment will be laid out in such a way that a skeleton staff can operate it during slack periods, and so that an extra crew can be brought in for the holiday rushes. The equipment needed and the details of its arrangement will not require discussion here, for such matters can be understood better from an examination of the several plans reproduced herewith, which have been selected as representative of good practice.

In this connection there is one particular idea which is worth special comment. It has been found that the serving of refreshments or light lunches during non-meal hours presents a difficult problem if this work is handled directly from the main kitchen. In order to make it possible to shut down the main kitchen except during meal hours, it is a good idea to segregate the so-called pantry equipment into a small separate room through which the waiters will pass from the main kitchen into the dining room. In the afternoon and evening this pantry can be kept in operation while the remainder of the kitchen is shut down, and by the inclusion of certain small equipment specialties, sandwiches and light refreshments as well as beverages can be served at all hours. A variation of this idea is found in clubs which include a buffet service bar in the men's grill. Some clubs go a step further and install a small special serving room for soft drinks and refreshments, an example of which may be seen in the plans of the Dearborn Country Club, of Dearborn, Mich. Beverage and light meal service to the men's locker room should not be overlooked. In some clubs this is handled directly from the main kitchen, which is feasible if the two are not widely separated, although other plans are preferable. If the men's grill has a buffet bar, and is located



Special Serving Pantry for Beverages, Etc., Dearborn Country Club. A Plan for a Similar Serving Pantry is Shown Below



close to the locker rooms, this may solve the problem. In other cases a small serving pantry adjoining the locker room is necessary. This latter plan is excellent in buildings where the kitchen is on an upper floor with locker rooms below, in which case the locker room pantry may be placed directly beneath the kitchen and connected with it by a dumb-waiter.

**AUXILIARY REQUIREMENTS.** The fuels used in the kitchen will depend entirely upon the supply which is available locally. Gas for the ranges and other appliances is often not to be

had, in view of which either coal or electricity will be substituted. The latter is preferable although more expensive both as to the cost of equipment and operation. If steam is available in the building, it should be employed by all means, as there is no more economical heating medium for steam tables, urns and other similar equipment. A good hot water supply is a real necessity, and the volume required should be carefully calculated. A plentiful supply at 180° Fahr. is absolutely necessary for the proper operation of dishwashing machines. The equipment specialist will be able to work out the volume required, just as he will be able to define the provisions which will be necessary in connection with plumbing, sanitation, ventilation, fireproofing, location and sizes of flues, etc. The problem of garbage disposal is appropriate to consider in connection with the equipment for the hot water supply. Due to the detached location of country club buildings, an incinerator is very desirable, and if included it can be provided in connection with the hot water heater.

**STORE ROOMS AND REFRIGERATORS.** The size of the kitchen storage facilities is so de-

pendent upon the local food supply situation that any generalizations would be rather impractical. It will not be difficult to find sufficient space for the store rooms in the ordinary club building, but a little care in their location and arrangement will be well repaid by increased economy of operation. If in the basement, the storerooms must be easily accessible to both the service entrances of the building and the kitchen. Receipt of supplies directly into the store room and not into the main kitchen is the best practice. Although it is entirely practical to separate the store room from the kitchen, this will be less true as far as the refrigerators are concerned. In small kitchens, such as are found in country clubs, there will often be a value in having the storage refrigerators in the main kitchen, in which case they may be combined with some of the service refrigerators, making a more economical installation. The refrigerators should, of course, be mechanically cooled, and the machinery installation for this purpose may wisely be put in the basement adjacent to the store rooms, thus forming the nucleus for a small department for ice and ice cream making as well as drinking water cooling.



View of the Main Kitchen of the Medinah Country Club, of Medinah, Illinois. R. G. Schmid & Co., Architects



Plan of the Kitchen, Serving in Three Directions; Glen Echo Country Club, Normandy, Mo. Preston J. Bradshaw, Architect

# ELECTRICAL EQUIPMENT FOR COUNTRY CLUBS

BY  
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CONSULTING ENGINEER

**P**ROPER illumination is most essential in any modern building. It adds to the convenience and comfort of those using the building and also to its attractiveness.

The various rooms and spaces should be lighted for the use for which they are designed. In the public areas, that is the entrance lobby, the lounge, the women's reception room, the women's rest room, the main and private dining rooms, the grill room, the card room etc., the lighting fixtures should be designed to correspond with the decorations and style of the rooms. When determining the amount of light required in these rooms, the color schemes must be considered. A Colonial room with its light colored walls will not require as high an intensity as a dark Spanish room.

**FIXTURES.** Both ceiling fixtures and brackets are usually installed for the general lighting of the lobby and lounge, which should be rather subdued and well diffused, since these rooms are used for resting and social purposes. The general lighting should be augmented by table and floor lamps so as to provide proper light for those desiring to read, and therefore plenty of convenient outlets and floor receptacles should be provided. In most clubs, dances and entertainments will be held in these rooms, and therefore

outlets for special lighting effects and for stereopticon and motion picture machines should be provided.

**PRIVATE DINING ROOM.** As a private dining room is generally arranged with one table in the center, the lighting must be designed to give sufficient light on this table. When these rooms are small and the decorations permit, a pleasant effect may be had by the use of brackets only, but in most cases it is preferable to use ceiling fixtures or a combination of both ceiling fixtures and brackets. Floor receptacles should be installed at the centers of these rooms for convenience in decorating the tables with electric lights.

**THE MAIN DINING ROOM** should have a well diffused, evenly distributed general illumination of fair intensity supplied by ceiling fixtures and brackets. It is very desirable to have small lamps on the tables around the sides of the room, and therefore convenience outlets should be provided for this purpose. Careful consideration should be given to the control of the lights in this room, as considerable saving in current may be made if this is properly designed.

**THE GRILL ROOM,** if it is used only as such, should have subdued lighting, as it is here that the members will linger, swap stories and discuss their "game." In some clubs the grill room is



Simple, Effective Lighting, Hollywood Country Club, Hollywood, Cal. Roth & Parker, Architects



also used as the card room, and in such cases the illumination must be bright, well diffused, evenly distributed, and without glare.

**TROPHY CASES, ETC.** All clubs have their bulletin boards and trophy cases, and these must be carefully lighted. Bulletin boards may be best lighted by reflectors so designed as to direct the light over the entire board but conceal its source from the eye. Trophy cases should have glass shelves for the best lighting effects, as in many instances a properly designed show case reflector installed across the front at the top will give sufficient illumination. Large cases should be so constructed as to permit installing vertical reflectors in the front corners without being conspicuous. All lamps in these reflectors should be frosted so as to diffuse the light and cut down glare on the objects displayed, and the reflectors should be designed to prevent any lights spilling outside of the cases.

**FAN OUTLETS** should be provided in the dining rooms, grill room, locker room and card room. These outlets should consist of receptacles and hangers for the fans and should be 7 feet above the floor, so that circulation of air may be obtained without causing discomfort to the occupants of the room. If fans are required in the lobby, lounge and similar rooms, those of the floor standard type should be used, as they may be connected to the convenience outlets. When these fans are not required they may be removed and leave no unsightly marks on the walls. This type of fan should not be used in dining rooms, grills, etc., as it is likely to be in the way. There is now on the market a very good ceiling fan and lighting fixture combined which comes in many designs, so that one may be obtained to harmonize with the decorations. The fan of this fixture is designed to keep the air in motion without causing disagreeable drafts or blowing papers or cards from desks or tables. For this reason it would be well adapted for use in card rooms.

**CONTROL.** In general, the lighting in the public spaces should be controlled from dead front, safety type panelboards located conveniently for those in charge of the various departments. The lights on the stairs leading to the upper floors and those in the bedroom corridors should also be controlled from a panelboard on the first floor. Exit lights should be installed over all exits leading to stairways on bedroom floors so as to assist in finding more quickly the points of egress in case of an emergency.

**IN BEDROOMS** a good general illumination is required. This is best accomplished by using central, enclosed globe fixtures which should be controlled by wall switches near the entrance doors. Outlets must be installed for bed lights, dresser lights, and table or floor lamps. The last

of these outlets are convenience outlets, and if the others are the same, with the bed lights fastened to the beds and lamps to the dressers, it permits of more flexibility in the arrangement of the furniture than if brackets are installed by the beds and dressers.

**BATHS, TOILETS AND SHOWERS.** The best lighting for private baths and wash rooms is obtained by brackets on each side of the mirrors over the lavatories, but very good results may be had from use of one bracket located over the center of a mirror. In toilets, ceiling fixtures should be used. The fixtures in all these rooms should be porcelain enamel with opalescent shades. The fixtures in shower rooms must be vapor-proof and should be of the bowl type. When the quantity of light is being planned for these rooms, it must be remembered that there may be more or less steam present at times and therefore the intensity increased. The lights in all these rooms should be controlled by wall switches near the doors, and those for the shower rooms should be outside of the rooms because of the vapor and water.

**IN LOCKER ROOMS** the intensity need not be very high, but the light should be well distributed. There should be some lights at the center of the room, for general illumination, and small lamps on about 7-foot centers over the aisles between lockers. For economical operation the lights in this room should be controlled in sections from a gang of switches located conveniently for the locker room attendant.

As "ultra-violet" and "infra-red" baths are becoming more and more popular and in some clubs have proved to be quite a source of revenue, consideration should be given to planning for them a room which will be convenient to both the men's and the women's locker rooms. This room will require general lighting, a fan outlet, and the special wiring for these lamps and their control, and also convenience outlets for vibrating machines and other apparatus that might be desired.

**IN THE KITCHEN** a fairly high intensity of light is required for the proper preparation of food. The best results for this room are had by using enclosed globe fixtures with baked enamel finish. Lamp receptacles should be installed under the range hood, as otherwise this is a very dark spot due to the black range and hood. The kitchen should also be wired for motor-driven equipment, such as the dough mixer, meat chopper, egg beater, dish washers, etc.

**PORCHES AND TERRACES.** The lighting of porches, where there is a possibility of serving meals, should be laid out with this in mind. A very pleasing effect may be obtained by using a number of small fancy fixtures so as to give a festive appearance, and convenience outlets



should also be installed for table lamps. Marine receptacles for special lighting should be installed on open terraces where lawn fetes may be held.

In the professional's department, where golf sticks are made, repaired and cleaned, special lights and outlets for small motors are required for the work bench. This room should also have good general lighting and special lights for show cases. Heavy duty convenience outlets should be installed throughout the building for vacuum cleaners, scrubbing and floor polishing machines, etc.

**SWIMMING POOLS.** Many clubs now have swimming pools, and these must be well lighted, as it is very important to be able to see an object at the bottom of the pool. Good illumination may be obtained for indoor pools by placing two rows of ceiling fixtures on approximately 15-foot centers over the pool. The fixtures should be vapor-proof, and each outlet must have a capacity of not less than 200 watts. Outside pools may be lighted in several different ways, depending upon their sizes and locations. A pool of the size usually built by clubs, if in an inconspicuous location, may be satisfactorily lighted with elliptical angle, enamel steel reflectors mounted about 15 feet above the water and spaced from 20 to 25 feet on centers, using 300-watt or 500-watt lamps. If the pool is in a more prominent location, ornamental street lighting units may be used in place of the angle reflectors. The lighting effect may be made much more attractive by the use of special under-water flood lights installed below the water line in the sides of the pools. These underwater flood lights cause the water in the pool to assume an aspect of sparkling brilliance, and a variety of color effects may be produced by the use of color lenses.

**TENNIS COURTS,** practice putting greens, and similar spaces may be illuminated for night playing. This may be accomplished by high wattage lamps and steel enamel reflectors so spaced as to give even distribution and proper intensity. Care must be taken to keep the lamps sufficiently high to minimize the effect of glare in the players' eyes. Similar lighting may also be used in lighting parking areas, but the intensity may be much lower. Driveways and foot paths should be well lighted by means of ornamental street lighting units properly spaced along the edges.

**SERVICE CABLES** and feeders must be run to the service company's lines. These cables and all outside wires should be lead-encased in underground conduits and, if the distances are excessive, manholes should be made to facilitate installation of the cables. When iron conduit is used underground, it should be carefully painted with a waterproof compound to prevent rusting

at the joints and, where the coating has been injured by vise and wrench, all joints must be made watertight. A better and more permanent installation will be made if fiber or vitrified tile conduit laid in concrete is used for underground work. If the cost of ground service feeders is prohibitive, they may be run overhead on a pole line all the way or to within a short distance of the building.

**TRANSFORMER VAULT.** If the load is sufficient to require special transformers for the building, a transformer vault should be furnished, as transformers on poles are very unsightly. The size and construction of this vault and the arrangement of the wiring should comply with the requirements of the service company. At the point where the service feeders enter the building, sufficient space must be provided for the service switches, meters and distribution panel. Power feeders must be provided for ventilating fans, pumps, refrigerating units and any other electrically-driven apparatus that may be installed. Many clubs are so situated that they are dependent for their water supply on deep wells or other sources from which the water must be pumped to a tank or reservoir. In this case, besides the feeder for operating the pumps, an electrical high and low water alarm system should be installed.

**TELEPHONE AND RADIO.** A conduit system for telephones should be installed for a switchboard in the office and for outlets in each bedroom and in locker rooms, professional's room, kitchen etc. Telephone booths with coin instruments should be installed in the lobby. A service conduit similar to that for electric service should be carried to the location of the telephone company's lines. A radio system may be provided with the receiving set located conveniently to the office and with loud speakers in the lobby, lounge, dining room, porch, grill room, card room etc. Each of these loud speakers should have a cut-off switch and volume control.

The number and locations of push-buttons and bells for entrance doors and signaling purposes depend largely upon the layout of the building, and therefore a careful study should be made of these requirements. Usually it is unnecessary and often undesirable to have waiters constantly in private dining rooms, and it is therefore quite essential to have push-buttons in these rooms to summon a waiter when his services are required. If a Turkish bath is installed, care must be taken to provide properly for all the special electric apparatus which may be needed.

The type of wiring and the selection of the proper grades of materials depend largely upon the size and construction of the building, and therefore these subjects have not been discussed in this article.

# THE HEATING AND VENTILATING OF COUNTRY CLUB HOUSES

BY  
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CONSULTING ENGINEER

**I**N the selection of a heating system and the necessary boiler equipment for the modern country club, a considerable amount of study is necessary to adapt this equipment to the actual requirements and comfort of the type of building which is contemplated. Great care should be exercised not only in the proper selection of the equipment and type of system but also in its proper design. The character of this equipment should be maintained generally to correspond with the character of the building.

Systems which are expensive to maintain and which include many refinements requiring a great deal of attention for adjustment and care, should generally be avoided. The modern club member demands comfort, and there is nothing more objectionable than to have any of the rooms cold or full of drafts or kitchen odors. These matters must be given careful consideration so that the building will not only be properly heated but also properly ventilated by natural or artificial means. Consideration must also be given to the efficiency of the heating and ventilating installation so that the cost of operation, the cost of fuel, electric power, etc., will be the minimum consistent with efficiency. Labor and attendance also must be given very careful consideration, so that there may not be increased assessments to the members and various financial headaches for the building or house committee due to excessive maintenance costs.

**HEATING SYSTEMS.** There are several different types of heating systems which may be adopted, depending upon the character and size of the club building. These may be classed generally as the hot water heating system, the one-pipe steam system, the two-pipe vapor system, and the two-pipe vacuum return system. For smaller clubs the old fashioned hot air furnace system is also adaptable, but this system has now been so improved that it can be used in larger buildings by the introduction of electrically-operated fans and humidifying apparatus, and it will be treated later.

**HOT WATER SYSTEM.** The hot water system, in which heated water is circulated through radiators and pipes, results in very even room temperature, but it has the objection of being slow to respond to temperature changes, especially where the club house is fitted with guest

rooms where it is desirable to keep windows open during the night. In such a case the room usually heats very slowly in the morning. It also has the objection of there being the possibility of both pipes and radiators freezing when located near windows which are left open during cold nights. Another objection to use of the hot water system is that the radiators have to be excessively large and do not lend themselves to being concealed in partitions or walls. With these exceptions, however, excellent results can be obtained from hot water heating.

**THE ONE - PIPE HEATING SYSTEM** is probably the lowest in first cost. It has to be carefully designed and installed with larger pipe sizes because the steam lines carry both the steam and the condensation. Pipes must also have more pitch than is necessary with other steam heating systems. The greatest objection to the one-pipe steam heating system is the air valves which are required on each radiator. If they get out of order they frequently leak steam and water, and thus cause damage to rugs, carpets, walls and decorations.

**TWO-PIPE VAPOR SYSTEM.** This system, which is probably most adaptable for the average club, differs from the one-pipe system in so far as the air valve is entirely eliminated and a thermostatic trap is provided, through which both air and water are discharged and carried back through a separate return line to the boiler room, where the water is discharged back into the boiler through an automatic return trap, and the air is discharged into the room through a vent trap. Smaller steam lines than in the one-pipe system can be provided and, if this system is properly installed, it will give very satisfactory results with pressures below 1 pound.

**THE TWO-PIPE VACUUM RETURN SYSTEM.** The only difference between the two-pipe vacuum return system and the vapor system described consists in the substitution of a vacuum pump for exhausting the air and pumping the condensation back to the boiler in place of the automatic return trap and vent trap. Vacuum return pumps are now mostly operated electrically, with automatic control features which cause the pump to operate only during such periods as when there is an accumulation of condensation or when the vacuum in the return system falls below a pre-

determined point. The vacuum return pump is desirable on larger installations or in buildings which extend over areas where it is difficult to carry the returns back entirely by gravity.

**HOT-AIR SYSTEMS.** The old furnace method of heating is suitable for small club houses. A modification of this system is now available by the introduction of a fan giving positive air circulation throughout the duct system, which overcomes the objection to the old hot air furnace system which was that it was affected by the direction and velocity of the wind. This system also is provided with a humidifier, and therefore it has the added advantage of maintaining a certain amount of humidity in the rooms. This system at present requires gas as fuel, and it is necessary therefore that gas supply be available and that the cost of the gas be sufficiently low to make such a proposition attractive.

**BOILERS.** For both hot water and steam heating systems either cast iron or steel boilers are suitable. The selection between cast iron or steel boilers is dependent upon the size and the cost of the installation. The successful welding of steel boilers instead of riveting them has brought down the cost of steel boilers so that they are now available for installations where previously they were considered too costly. With the cast iron boiler there is the possibility of cracking of sections in case of careless operation. Steel boilers should always be used where it is necessary to carry higher pressures, as for example, for kitchen or laundry supply. It is customary to provide about 40 pounds pressure for kitchen purposes and about 90 pounds for laundry purposes where an ironer is to be used. An important consideration in connection with the selection of the boiler is the type of fuel which is to be used,—whether coal, oil or gas. A different type of boiler should be used for each kind of fuel and, while it has been quite customary to install oil or gas under a boiler in which coal has been burned, the best practice is to first determine the fuel, and then make the selection of the boiler in accordance therewith. The chimney is also an important consideration, and frequently it presents quite a problem to the architect, as the height necessary for good operation is difficult to work into the general design of the building, especially when the club house is of the low and rambling type. It is essential, however, in order to have satisfactory draft for the boiler, that the chimney be of the required height and that this should not be reduced below the minimum requirements.

**FUEL.** The selection of the most desirable fuel to use for the heating system depends very largely on the locality of the club house and the section of the country in which it is built. In

certain parts of the United States where only one class of fuel is available, this is of course a simple problem, but where coal, oil and gas are all available it is a question which of these to select, and a study of the cost of operating the boiler plant should be made, taking into consideration convenience, labor and other items involved in maintenance. It is, of course, desirable in all cases to avoid smoke, and where soft coal is selected, care should be taken to install boilers which will burn coal without smoke. If anthracite coal is utilized, the size of coal best suited to the conditions should be selected. If the smaller size, such as buckwheat coal, is to be burned, a very considerable saving in cost of operation can be made. This, however, usually involves the installation of forced draft blowers, since natural draft is not ordinarily sufficient to supply the required quantity of air through the fire bed for combustion. Recently several forms of automatic stokers for small boilers have been put on the market for burning this small size of coal. They are proving quite satisfactory, require comparatively little attention, and are adaptable to almost any size of plant; furthermore, the first cost is not very great.

If oil is selected as the fuel, a study should be made of the convenience of delivery, and the size of the storage tank should be determined accordingly. In selecting the type of oil burner, great care should be taken that proper service of the manufacturer is available in the immediate locality.

If gas is selected, careful study should be made, particularly of the probable cost of operation. Undoubtedly it is the most desirable fuel of all, owing to its cleanliness, its ease of control, and the elimination of any responsibility on the part of the attendants of watching the supply on hand, as is the case with oil and coal.

**AUTOMATIC BOILER CONTROL** through the installation of thermostats and automatic appliances should be adopted in all country club buildings. These appliances range from the simple equipment for controlling the draft on hand-fired boilers to the automatic control of the oil burner and gas flame. A very considerable saving in fuel is accomplished by using these appliances.

**STEAM PIPING.** In making the piping installation for any of the steam or hot water systems, care should be used in the proper proportioning of the pipe sizes, and the proper grading or pitch of the pipe so that the condensation will properly drain back to the boilers without noise. Nothing disturbs the quiet and restfulness of a country club house more than hammering or gurgling in the steam lines, and there is no occasion for there being this in any heating system.



The method of installing the pipe is also a question for consideration, and it should be determined whether the steam risers are to be exposed in the rooms or concealed in chases in the walls and partitions; also, whether the radiator branches are to be run exposed above the floor or concealed in the floor construction or run exposed at the ceiling below. These are matters of appearance, but they also affect the cost of installation. The least expensive method is to expose the pipes, as those which are concealed should always be insulated. Generally all steam and return lines should be insulated, except those exposed in finished rooms. For this purpose it is customary to utilize an asbestos air cell covering. Boilers should always be thoroughly insulated.

**RADIATORS.** The design of radiators during the last few years has undergone a considerable change. In cast iron radiators we have a new and better design in the so-called "tube" types, and we also have available now the brass radiators offered by a number of manufacturers. These lend themselves especially to concealment in walls and partitions.

The quantity of radiation to be installed should be determined by someone who is familiar with making these calculations, and the matter of radiator locations should be studied. Radiators are most advantageously located under windows, as more cold penetrates through the windows than through the walls. The heat from the radiator counteracts this, and thus minimizes uncomfortable drafts in the room. Furthermore, a radiator placed against the wall will always soil the wall decorations. Automatic control devices on radiators are available, and, while they add somewhat to the cost of installation, they are desirable from the fuel savings standpoint as well as from the standpoint of room comfort. These devices will automatically shut off the steam supply of the radiator when the room temperature goes above the predetermined point. This control is available through a system which automatically controls the radiator valve through compressed air operated by thermostats. Self-contained automatic control valves are now also available. These require no compressed air or other connections, and are mounted directly on any radiator in place of the hand valve.

**VENTILATION.** The problem of the proper ventilating for a country club is important, but usually not so difficult to solve as in a city building. The proper ventilating of the kitchen is generally the most important, and frequently this is the only room which needs mechanical ven-

tilating. The kitchen ventilation should be accomplished mostly by exhausting air from the room, and by far the largest amount of this exhaust should be taken from the range hood, so that cooking odors will be carried off before they have an opportunity of getting into the rest of the kitchen. If conditions are such that supply ventilation is also necessary in order to maintain comfortable conditions at all times, the equipment should be installed with ducts well distributed and in such a manner that employees will not be placed in objectionable drafts from the supply outlets.

Grill rooms, private dining rooms, and other such rooms where there is smoking, should be provided with both supply and exhaust ventilation where the character of the building will warrant the expense. The dining rooms, lounges, ball room, etc., where warranted, should also be ventilated by mechanical means, either by a central system of fans, ducts and tempering coils or by individual ventilating units. These ventilating units are frequently placed under the windows and are enclosed in neatly finished metal cabinets. They take fresh air from the outside through an opening in the wall, and by means of small fan equipment the air is blown over tempering coils and discharged into the rooms at any desirable temperature. The electrical requirements for these units are small, as the fans are driven by 1/6 or 1/8 h. p. motors. This method is frequently very desirable for ventilating a room where elaborate systems cannot be installed. This method prevents the drafts which result from trying to ventilate a room by opening windows during cold weather.

Where toilets or baths are installed in rooms which have no outside windows for ventilating, some means of exhausting the air should be employed. This can sometimes be done merely by running a duct through the roof. In large toilets it is desirable to install small exhaust fans, so as to change the air more frequently than is possible, where only natural means are depended upon.

**POOLS AND TURKISH BATHS.** Where an indoor pool is installed, special attention should be given to its proper heating, and sufficient additional capacity should be provided in the boilers for heating the water when the pool is being filled as well as for maintaining the temperature afterwards. Where a Turkish bath forms a part of the club house equipment, further consideration must be given to the maintenance of the high temperatures required both summer and winter.



# ✓ CHECK LIST FOR GOLF AND COUNTRY CLUBS

A GREAT deal of time can be saved by both the architect and the building committee if the various items that enter into the construction of a country club are discussed in the early conferences and decided upon in order.

A. SITE AND GENERAL PLAN. Site selected by Architect, Golf Course Architect, Landscape Architect and Committee.

SPORTS AND GAMES. Choice for present plans in order to provide space to accommodate additional sports and games.

Golf 9 holes  
" 18 holes                      Golf 27 holes

Practice Tee and Fairway

Practice Green                      Clock Golf

Tennis Courts

Grass Courts—Number . . . . .

Clay Courts—Number . . . . .

Swimming Pool—Size

Wading Pool

Horseback Riding

Bowling Green, Lawn Bowls

Archery

Skating                      Curling                      Hockey

Ski Jump                      Toboggan Slide

Handball Courts

Squash Tennis Courts

" Racquet Courts

B. BUILDINGS (Several may be combined)

Main Club House

Locker Room (Separate House?)

Professionals' House                      Caddy House

Starter's Shelter                      Garage

Ground Keeping and Tool House

Summer Houses

Shelters at distant tees; at tennis court, etc.

Stables                      Boat House

C. STYLE OF ARCHITECTURE

General Architectural Style

General Exterior Materials

Wood, Brick, Stone, Stucco, Half-timber

D. ROOMS AND SERVICES

1. MAIN CLUB BUILDING

Porte Cochere                      Entrance Lobby

Coat Rooms                      Reception Room

Offices                      Lounge

Card Room                      Smoking Room

Billiard Room                      Trophy Room

Sun Room

Dining Room                      Grill Rooms

Private Dining Rooms

Kitchen                      Pantry

Steward's Room

Men's Locker Room

Serving Pantry

Men's Shower Room

Men's Toilet                      Men's Locker Lounge

Women's Locker Room

Women's Shower Room

Women's Rest Room

Women's Toilet

Linen and Towel Room

Bedrooms

Servants' Dining Room

Servants' Bedrooms

Servants' Toilet

Servants' Locker Room

Storage Rooms

Boiler Room

Fuel Room

Laundry

Drying Room

2. LOCKER ROOM BUILDING (Services listed above under Main Building)

3. GOLF PROFESSIONALS' SHOP

Sales Space, Counter Display Cases

Shop—for repair

Club Storage, horizontal racks of members' golf bags

Office and Toilet

4. CADDY HOUSE

Caddy Room

Lunch Counter

Toilet

5. GARAGE, Sheds, number of cars . . . . .

6. GROUND KEEPING AND TOOL HOUSE

Lawn Mowers, Rollers

Tractors, Small Tools, Hose, etc.

7. STABLES

No. of Stalls

Box Stalls

Saddle Room

Feed Room

Grooms' Room and Toilets

Riding Ring

8. BOAT HOUSE

Boat Room, Rowboat and Canoe Racks

Lockers

Dressing Rooms, Showers and Toilets

Bath Houses in Connection? Number?

## FEATURES OF MAIN BUILDING

1. FOUNDATIONS

Concrete, Stone, Brick, Block

Waterproofing,—Integral, Membrane

Foundation Drainage

2. WALLS

Frame, clapboard, shingle, etc.

Brick; face, common

Brick veneer

Stucco over Frame, Brick, Hollow Tile.

Cement Block

Furring of Walls, wood, tile

3. COLUMNS—Piers, Steel, Lally Columns,  
Wood Posts
4. EXTERIOR TRIM  
Stone,—kind. Wood Terra Cotta
5. FLOORS  
Wood,—kind  
Steel Joists—rolled, light truss type  
Concrete, flat slab over steel, reinforcement  
Tile, one-way, two-way  
Pan system
6. ROOF—Slate Sheet Metal  
Shingle Composition  
Tile Canvas
7. LEADERS AND GUTTERS  
Material Flashing
8. ROOF TRUSSES  
Exposed Concealed  
Wood Steel
9. PARTITIONS  
Stud,—Hollow Tile, Gypsum, Brick, etc.  
Lath,—Metal (type), wire, wood, wall  
board, etc.
10. INSULATION, HEAT  
On Walls, Roof, etc.  
Board, Quilt, Sprayed, Fill (type and  
thickness)
11. INSULATION, SOUND  
Material and Method

#### INTERIOR FINISH

1. SCHEDULE  
List by Rooms on Schedule Form. Columns across the top of page divided into headings:  
1. Room, 2. Style, 3. Walls, 4. Floor, 5. Finish, 6. Ceiling, 7. Trim Material, 8. Trim Finish, 9. Mantel Material, 10. Special Features
2. WALLS  
Material and Finish, as Paint (number of coats), Textured Plaster (type), Wallpaper, Panel Mouldings, Paneling (pine, oak, etc.), etc.
3. FLOORS  
Oak, Maple, Pine, Parquet, Tile, Stone, Cement, Linoleum, Rubber Tile, Cork, Slate, Terrazzo, Marble, Carpet, etc., etc.
4. TRIM  
Wood, Metal, Plaster
5. TRIM FINISH (number of coats, etc.)  
Paint, Enamel, Lacquer, Stain, Varnish, Wax, etc.
6. HARDWARE  
Make complete List by Rooms, Including Kind, Style, Make, Number and Finish

#### HEATING EQUIPMENT

- FUEL Coal, oil, gas, electricity  
Delivery and storage provisions
- TYPE OF HEATING PLANT  
Warm-air Furnace (type)  
Steam, one-pipe Steam, two-pipe  
Vacuum Steam Hot Water
- RADIATORS  
Type; style; material; concealed; radiant; radiator covers
- AUTOMATIC HEAT CONTROL  
Thermostats, etc. Humidifiers

#### SANITARY EQUIPMENT

- WATER SUPPLY  
Source, pumps, storage, pressure tanks
- WATER PIPES  
Cold—Material, brass, wrought iron, steel  
Hot—Material, brass, wrought iron, steel
- HOT WATER HEATER  
Type and Fuel
- WASTE AND SOIL PIPES
- FIXTURES  
Material, type; Lavatory, Tub, Showers, Shower Heads, Traps, W. C., Faucets, Mixing Valves. Accessories. (*Make list for each shower room, toilet, lavatory, etc.*)
- SEWAGE DISPOSAL  
Septic Tanks; Sewers

#### ELECTRICAL EQUIPMENT

- SUPPLY  
Public Service, Private Plant  
Lighting, Power, Heating
- OUTLETS for  
Lighting Fixtures, Floor Lamps, Reading Lamps, Fans, Mixers, Vacuum Cleaner, Radiant Heaters, Water Heaters, etc. Switches (types), Base Plugs (types)
- LIGHTING FIXTURES  
(*List for each room to be made*)
- BELL SYSTEM for entrances
- ANNUNCIATOR SYSTEM to service quarters
- INTERCOMMUNICATING private telephone system
- TELEPHONE (Long Distance)
- BURGLAR ALARM SYSTEM
- FIRE ALARM SYSTEM
- SPRINKLER SYSTEM OF FIRE PROTECTION
- ELEVATOR Dumbwaiter
- RADIO, Plugs and Connections

#### SERVICE EQUIPMENT

- KITCHEN EQUIPMENT  
Schedule in consultation with Kitchen Equipment Specialist
- REFRIGERATORS
- INCINERATOR
- LAUNDRY EQUIPMENT